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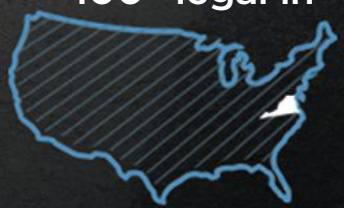

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Learning to fly: Testing Robby Gordon's Stadium Super Truck—and our bravery—at the Motown Mile.

BY LARRY WEBSTER

COVER PHOTOGRAPH BY **RICHARD PARDON**

THE TALE OF THE ALL-NEW

2016 VOLT

AS TOLD FROM AN ENGINEERING AND DESIGN PERSPECTIVE.

We sat down with Executive Chief Engineer Pamela Fletcher and Executive Director of Global Design John Cafaro to talk about the engineering and design innovation that went into creating the revolutionary next-generation Volt.

Preproduction model shown. Actual production model may vary. Available Fall 2015.

Preproduction model shown. Actual production model may vary. Available Fall 2015.

Preproduction model shown. Actual production model may vary. Available Fall 2015.

Preproduction model shown. Actual production model may vary. Available Fall 2015.

PAMELA FLETCHER

CHEVROLET EXECUTIVE CHIEF ENGINEER
ELECTRIFIED VEHICLES

What are some of the technological breakthroughs in the all-new Volt?

Customers tell us they love range, so we wanted to give them more range. We've fine-tuned the aerodynamics and drag coefficient, resulting in up to 53 miles of pure electric range[1] nearly 40 percent more than the current-generation Volt. The all-new Voltec propulsion system optimizes two new motors for prime power delivery, while increasing efficiency. Volt offers 420 miles of total range[1] without having to stop and plug in. The improvement in fuel economy and EV range will save time otherwise spent at the pump as owners can expect over 1,000 miles between fill-ups by charging regularly[1] providing a more convenient driving experience for our customers.

What are the other differences between the first- and second-generation Volt?

The first-generation Volt was a breakthrough vehicle, and the second-generation Volt takes that idea even further. Volt is the no-compromise electric vehicle with a gas-powered generator on board to take you hundreds more miles beyond its battery range. We worked around every system of the car to make it more efficient and the new vehicle is over 230 pounds lighter than its predecessor. We also have an all-new battery cell that delivers 20 percent more energy by volume[2] It's more energy dense but weighs 21 pounds less than the Gen I Volt with a lot more capacity.

> *"Customers tell us they love range, so we wanted to give them more range."*
>
> *Pamela Fletcher*
> CHEVROLET EXECUTIVE CHIEF ENGINEER, ELECTRIFIED VEHICLES

JOHN CAFARO

CHEVROLET EXECUTIVE DIRECTOR
GLOBAL DESIGN

How did you approach exterior design for the all-new Volt?

When we started putting pencil to paper on the all-new Volt, we wanted something exciting-looking. We knew it was going to have four doors, but we really wanted something sleek with a coupe aesthetic. The biggest change from Gen I to Gen II from an exterior standpoint is that the car's just got a lot more attitude. We spent 340 hours in the wind tunnel, validating and tuning the exterior surface like you might tune a guitar, dialing in the notes just perfectly so they sound right. There is this hint of something beautiful and functional about the car's new shape. We made the all-new Volt more dynamic and more gestured. It's eco with an attitude.

What interior enhancements have you designed into the vehicle?

We added seating for five, which was important to our customers. Additionally, we added richer materials throughout the interior so it's more sculpted, swept and has a lot more movement. In the center stack, we made the controls more intuitive and added a new interface. Apple CarPlay[3] is an iPhone® integration technology that allows you to conveniently access compatible apps on the Chevrolet MyLink touch-screen.[4] Chevrolet design has evolved through the years and we're looking at things totally differently. We're taking some risks along the way, but that's what makes life exciting.

CHEVROLET
FIND NEW ROADS

1 EPA-estimated 53-mile EV range based on 106 MPGe combined city/highway (electric) and 42 MPG combined city/highway (gas). Actual range varies with conditions. 2 Comparison to the initial 2011 Volt battery cell. 3 Vehicle user interface is a product of Apple and Apple's terms and privacy statements apply. Requires compatible smartphone and data plan rates apply. iPhone is a trademark of Apple Inc., registered in the U.S. and other countries. 4 Full functionality requires compatible Bluetooth and smartphone, and USB connectivity for some devices.

GO

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Sebring International Raceway

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Long Beach Street Circuit

4 **April 30 - May 1**
Mazda Raceway Laguna Seca

5 **June 4**
The Raceway at Belle Isle Park

6 **July 2-3**
Watkins Glen International

7 **July 9-10**
Canadian Tire Motorsport Park

8 **July 23**
Lime Rock Park

9 **August 6-7**
Road America

10 **August 20-21**
VIRginia International Raceway

11 **September 16-18**
Circuit of The Americas

12 **September 30 - October 1**
Road Atlanta

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THIS MONTH ON

ROADANDTRACK.COM

TEN PEOPLE WHO TRANSFORMED HOW WE JUDGE PERFORMANCE

Cars keep defying odds.

Carroll Shelby built performance icons through grit and moxie—and fierce competition on track. That's been the pattern for the great leaps forward in automotive excellence. These 10 people have helped to set the bar for our new golden era of performance.

ROAD & TRACK + THE LINCOLN MOTOR COMPANY

LIFE-CHANGING LUXURY: PERFORMANCE

ACTIVE AND ADAPTIVE: FEATURES THAT BRING YOUR VEHICLE TO LIFE

Vehicle Dynamics Expert Brian Novak is soft-spoken. He's slow to tout his own achievements . . . but making the 4387-pound, AWD Lincoln MKX drive like a much smaller, lighter vehicle—so it's not just fast, but also exceptionally agile—is worth crowing about. He will at least discuss the matter, humbly, if you prod him.

"There are over a thousand different parameters I can change with the suspension in real time. We're monitoring yaw, pitch, roll, dive, all the driver inputs, the speed of the vehicle." Novak's main tool for responding to these data points is the Lincoln MKX's CCD (continuously controlled damping) system. It uses hydraulic shocks with integrated solenoids that utilize the vehicle's 46 sensors—including steering, wheel motion, throttle and brake inputs, and the attitude of the vehicle—to independently control all four corners of the car. (CONTINUED ONLINE)

BY MICHAEL FRANK

Michael Frank has been an automotive journalist for nearly two decades and is a regular contributor to *Road & Track*, *Outside Magazine*, and *Cool Hunting*, among many other publications.

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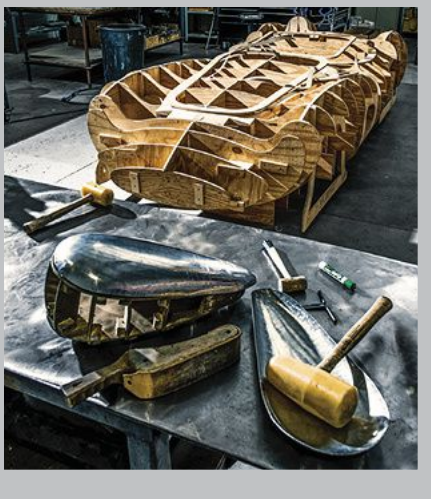


R&T ARCHIVES; JACK BARUTH; HOODINKEE; CXC SIMULATIONS; COURTESY OF LINCOLN MOTOR COMPANY

Enough about us. Let's talk about you for a minute.

There is the relaxed you (hopefully we'll be seeing that you a little more often). There is the sporty you (the you who can dodge and weave and go go go). And then there is the intelligent, dependable, everyday you. This is the one who knows that all of you need their vehicle to be versatile, responsive and smart enough to adapt to whichever one of you is behind the wheel. Three driving modes that, all together, deliver the feeling of control, comfort and — wait for it — connection. It's just one (well, three actually) of the impressive innovations you'll find on the entirely new Lincoln MKX. *LincolnMKX.com/Driving*

THE FEELING STAYS WITH YOU.

Available features shown. Wheels available fall 2015.

Go

CAPTURING THE LIFE AT SPEED

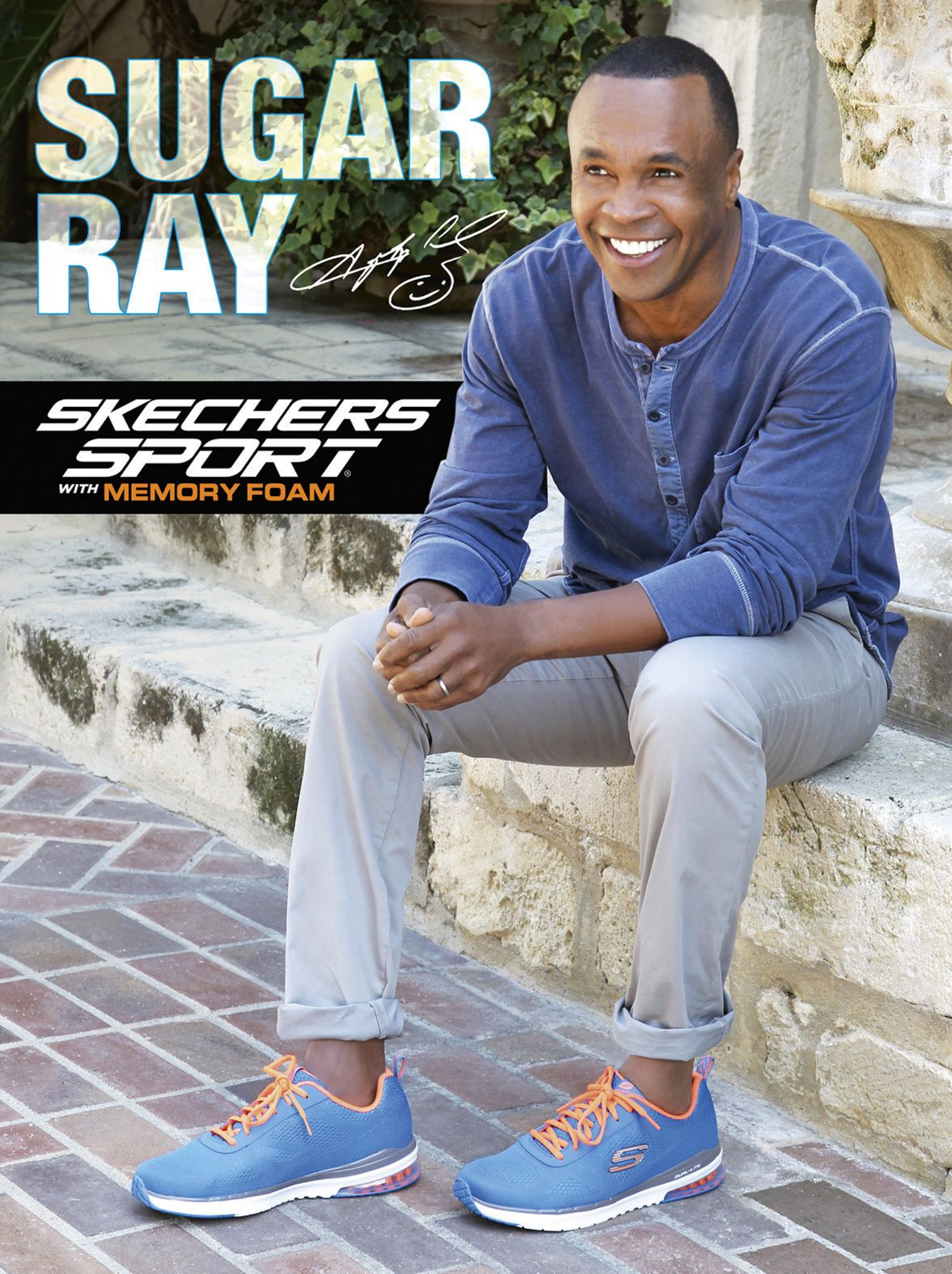
JAGUAR'S UNFINISHED BUSINESS

The Lightweight E-type was exotic in 1963: steel body traded for aluminum to save 250 pounds, a ripping D-type racing engine between the fenders. By 1964, it wasn't exotic enough. Only 12 of the planned 18 were built, leaving six gaping holes in the hardbound production registry at Coventry. Last year, Jaguar decided to right a wrong and build the six remaining Lightweights in a workshop carved out of the historic Browns Lane factory, where the original dozen were built a half century earlier.

Go

METAL AND MEN

The Lightweight facility isn't a typical auto shop—it looks like an aerospace clean room. Jaguar brought in folks from aviation, people accustomed to building with aluminum, by hand. The rivets were counted, measured, set exactly right. Every one. Every location. Same for every weld. They could have made these six cars better—modern underneath—but they didn't. Resisting every engineering impulse, they're exactly the same as 1964. Part for part. The man-hours invested run into the tens of thousands.


SUGAR RAY
SKECHERS SPORT
WITH MEMORY FOAM

Go

THE BEATING HEART

Carburetors. Fuel injection. The Lightweight E-type dabbled in both. Continuation-car customers have the choice of classic triple Webers or peaky, mechanical injection. We tried both. The 340-hp DOHC inline-six made lovely, broad power with carbs and had manic top-end snap with the FI. Either provides a perfect row of glinting trumpets. Both will steal the air out of your lungs.

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2016 GLE 450 AMG® Coupe shown in Palladium Silver metallic paint with optional equipment. Vehicle available late summer 2015. ©2015 Mercedes-Benz USA, LLC
For more information, call 1-800-FOR-MERCEDES, or visit MBUSA.com.

Go

RUBBER MEETS ROAD

Circuito de Navarra, Spain. I didn't expect the Lightweight to be so eager. Or so menacing. The Rolling Stones can't give me the shakes like this. I can hear my heart pounding out a rhythm in my ears. Right around 4750 rpm, my pulse lines up with the tach and finds harmony. My body rings like a tuning fork. This. *This.* The thin steering wheel, perfectly communicating everything, always. First gear is good for 70, maybe 80 mph, then second and third for an instant down the straightaway. Feet get busy on double-clutch downshifts. Slipping the clutch too quickly puts the Jag into a long waggle, like a scolding finger. Even clumsy, even wild, even backing it in a little and counting on the limited-slip rear to dig me out of trouble, it's so, so good. Worth a million, even. —**CHRIS CANTLE**

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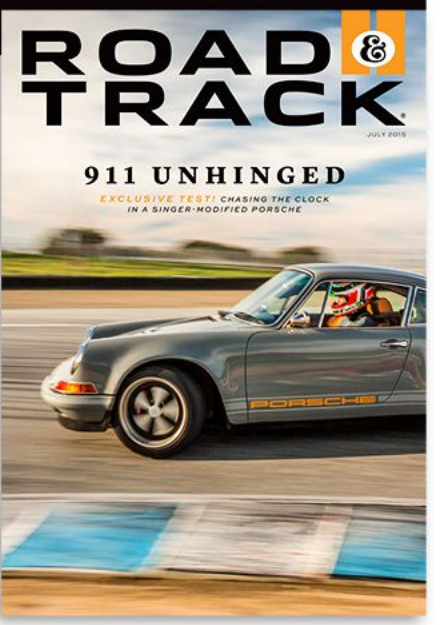
1. Claim based on average horsepower from Lexus IS line year over year vs. 2016 Lexus IS line. 2. Ratings achieved using the required premium unleaded gasoline with an octane rating of 91 or higher. If premium fuel is not used, performance will decrease. 3. Performance figures are for comparison only and were obtained with prototype vehicles by professional drivers using special safety equipment and procedures. Do not attempt. 4. Claim based on 6.6-second 0-to-60 time of the 2016 Lexus IS 200t vs. 7.7-second 0-to-60 time of the 2015 Lexus IS 250. 5. Base model comparison of 255 horsepower for the 2016 Lexus IS 300 AWD vs. 204 horsepower for the 2015 Lexus IS 250 AWD. ©2015 Lexus.

Letters

BREAKFAST WOES, THE DARK SIDE OF HEADLIGHTS, AND THAT 911.



Dear R&T,

I've been reading Road & Track *since May 1976. I've seen the magazine go through multiple changes, but the most recent have been the most dramatic. The July 2015 issue stands as the best I have ever seen. The topics were spot-on for an enthusiast, and the writing pulled me into each story.*

DOUG WATERMAN, APPLETON, WISCONSIN

COLD COFFEE

I spent this morning with a stale carrot muffin, lukewarm coffee, and the July issue; lukewarm because I spent too much time enthralled by the articles on the Singer-modified Porsche 911 and the Nürburgring. Keep up the brilliant writing.

JIM NOSELLA
BURNABY, BRITISH COLUMBIA

Your piece on the Nürburgring ["Ring of Fire"] brought back memories of a week I spent there in the early Seventies, wearing out a new set of racing Pirellis on my 1969 Porsche 911S. The local racing school taught us the right line for every corner and allowed us lots of free driving. The old, longer Nordschleife was open for us. Maybe in my next life I'll be able to revisit that wonderful set of twists and dips through the Eifel Mountains.

MAURY BUNN
ENTERPRISE, OREGON

SINGER FOR YOUR SUPPER

No offense to Mr. Floor Mat's Porsche 911 by Singer Vehicle Design ["Flat Sex"] but for $575,000, I would rather buy a long-nose 911 outlaw for $150,000, then rent Willow Springs and pay Patrick Long to teach me how to get through Turn 9. With $400,000 remaining, I would purchase a new grocery getter like the Cayman GT4.

Twist my arm and I'll slip Eddie Irvine $25,000 to let me party on his yacht at next year's Monaco Grand Prix. What to do with the rest? I'll hire some roughnecks to kidnap Magnus Walker and cut off his dreadlocks. Next, I'll buy a real Vincent and ship it to Peter Egan as a surprise gift for all of the great articles he wrote. Lastly, I'll send *Road & Track* the balance as a bribe to stop publishing drift photos.

REX MCAFEE
LAGUNA HILLS, CALIFORNIA

"Flat Sex." Yup! That about covers it. Evan Klein made some magic with the Singer photography. First spare $400,000 I get, I'm making a call.

COLIN WALLACE
WESTLOCK, ALBERTA

TO THE NEXT 68

The July *Road & Track,* in my mailbox 68 years after your first issue, is a cornucopia of great automotive journalism, ranging from the bespoke Porsche 911 by Singer (Smith) and the Tesla Model S P85D (Cammisa) to the long-term Corvette C7 report (Prince). Throw in a Sam Posey tribute (Webster) and Go Lutz Yourself on the last page, and you have a magazine true to the founders' and the Bonds' vision. Sign me up for another 68 years!

KEN GUTWEIN
GLEN COVE, NEW YORK

We do what we can. Now, should we make the bill out to "Ken" or "Kenneth"?

A NOSEFUL OF SMITH

Sam: I made the mistake of reading your "French Confection" Smithology column over breakfast while sipping some masala chai. I discovered that hot chai's even spicier when it's exiting your nose.

GERRY JOHNSON
SAN JOSE, CALIFORNIA

Hats off to Sam Smith for his article on Weber sidedraft carburetors [Lost Art, June]. The sexy beauty of the trumpets—the sound of the air rushing through those musical instruments and the growl from the exhaust—is the best part of owning sidedrafts.

MITCHELL SMITH
BOONE, NORTH CAROLINA

LIGHTING THE WAY

PLEASE. Don't let Jason Cammisa loose with any more engineers' ideas. Don't let NHTSA read his piece on headlights ["DOT in the

CONTINUED ▸

EDITOR'S LETTER BY LARRY WEBSTER

"HEY, YOUR CAR'S ON FIRE," said a voice to my right. Couldn't be me, I thought. But in my mirror, I caught a glimpse of yellow flames angrily dancing from the foam air cleaner. Course workers standing nearby ran toward me, screaming "GET OUT!" While I'd intended to spend race weekend giving my freshly restored Formula Ford a proper workout, a baptism by fire wasn't what I had in mind.

In these situations, you hope to react with speed and courage, but you never really know what you'll do until the time comes. Now I realize that I will probably fall short. After successfully unlatching my belts, I flopped out of the cockpit like an eel from a bucket while a couple of brave people snuffed the fire with an extinguisher.

As they worked, I mentally tallied the repair bill and rued the fact that, this weekend at least, I was going to miss any further driving on what has become one of my favorite tracks—Wisconsin's Road America. Luckily, the track saviors limited the damage to the air filter, and for that I'm eternally grateful. I would hate to be the guy who incinerated one of only 13 Formula Fords that emerged from Dan Gurney's All American Racers in the late 1970s. This car is my da Vinci sketch.

After rebuilding everything but the engine—a stingy omission I cursed on Road America's long straights—I'd finally gotten my AAR Eagle ready for The Hawk vintage race in July. Or so I thought. The 1.6-liter engine protested every time I squeezed the gas, clearing its throat until finally unleashing the perhaps 100 available horsepower. I thought I could live with the Eagle in this condition, but the poorly adjusted carburetor caused the fire. Trouble was, I didn't know how to fix the problem, even with all the friendly free advice in the paddock. I've got a lot to learn about the Weber carburetor, which is, of course, part of the fun.

The knuckle skin and bank accounts sacrificed for those moments were well spent.

Peak speeds and lap times are slow in the 1000-pound Formula Ford, but the car is still a thrill. In Road America's fast sweeping bends, like Turn 1 and the exit to the Carousel, my ill-running machine handled brilliantly, displaying a grace that I lacked. As I drifted just a foot or so onto the exit curbs, going maybe 80 mph but feeling like it was 150, all the hours I spent this winter and spring working on the Eagle were the furthest thing from my mind. The knuckle skin and bank accounts sacrificed for those moments were definitely well spent.

So the prospect of prematurely ending my weekend was a bummer. But with a bunch of cleaner and a quick rebuild by contributing editor Colin Comer, who was next to me in the paddock with his 1995 800-hp Trans-Am Mustang, my Eagle ran the next day. High drama, low pain. ■

Letters CONT.

Dark," July] or, first thing we know, cars will have to have lights costing $2500 each.

GORDON WHITE
DELTAVILLE, VIRGINIA

Sorry, Gordon. We can't be held responsible for what Cammisa gets loose with.

CHRIS CANTLE

Cammisa's column about the government keeping us safe actually shows how government control can lead to unintended consequences. He laments the rules that kept sealed-beam headlights in the U.S. long after better technology was available, and he's now frustrated that the government prohibits use of the latest lighting technology. I say, let the manufacturers innovate and car magazines educate, and let the public select the cars and features that best fit their needs.

JOSEPH MARLETTE
VONORE, TENNESSEE

THE SINCEREST FORM

I recently resumed reading *R&T* after a lengthy absence. The content and delivery every month have been superb. But the best effort so far has to be the Motorsport Issue [May]. It has inspired me to renew my subscription. I did, however, notice a blatant case of imitation, regarding the nose graphics on the Glickenhaus SCG003. My dirt-track super-stock car has been flashing that toothy grin for quite a while.

MIKE WALKO
KNIGHTSEN, CALIFORNIA

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SMITHOLOGY BY SAM SMITH

SOME LUCKY PEOPLE GET HELP when they need it. Years ago, I got it from my friend Bill Caswell. Bill is an overcaffeinated, quasi-employed, irritatingly attractive race driver whose primary income, he once told me, is "hard to explain." ("So," I replied, ". . . sex work?") I was in a period of mild depression, a year of mostly lolling around and working on my motorcycle. I had a job, but my wife and I had just moved to California and were effectively broke. For a number of reasons, my free time was basically spent waiting to go back to work. I watched a lot of cartoons.

Bill gave me endless hell for this. When I finally got off the couch, he gave me less hell. It began when he decided to try stage rallying. ("I have all these crappy, worthless old cars," he said. "We should kill them in the forest.") He needed a co-driver. The plane ticket was too expensive, but it was rerun season, so I went.

Our first race was NASA's Rally Tennessee, in 2009. Feeling saucy, I strapped into the passenger seat of a rusty BMW M3 that Bill had found, half-abandoned, on the south side of Chicago. Locals had been using it as a brothel, which may have been a gentler life. We built the car in three sleepless days, then slammed down the highway to Tennessee.

Five minutes after the start of the rally, the BMW sat crashed in a ditch, the front bumper playing tonsil hockey with a tree.

"I'm sorry," Bill said.

"Well, I mean, it's your car," I said.

"Now we can go drinking!" he said, with perhaps too much enthusiasm.

Later, while convincing a bartender to sell me an oil drum of bourbon, I stared into a cocktail napkin and decided that it was better to have loved and lost, or something. (The memory, predictably, is fuzzy. And reeks of paint thinner.) Five minutes of speed and laughter now seemed a better brain implant than an encyclopedic knowledge of *Futurama*. Also, I couldn't remember why it had ever been different.

Emptying my glass, I vowed to never again get lost in a couch cushion. I then marched back to my hotel like a knight errant and proceeded to make out with a pillow for nine hours, fully dressed. As one does after Big Whiskey Decisions.

The next morning, the moment still seemed like an accomplishment. Or at least the sighting of a problem, which is almost as satisfying. But why is it always easiest to do nothing? To not go outside, have an adventure, get lost and answerless for a bit? Maybe because real life is occasionally exhausting, and you can't always get enough rest. Lack of action begets itself. And then you wake up one day and notice the race tires in the basement have dry-rotted. The project car is covered in dust. The bike is full of stale gas. It's been months since you tried something indefinite.

I mention all this because my wife recently gave birth. The process kept me tied to the house, as it does. I didn't want to go too far from town in case the baby came early. After, I couldn't leave, because there were new-baby jobs to do. The usual stuff.

But lately, it's gotten easier to get out. (My long-suffering wife has insisted upon it, actually.) And . . . I haven't.

Like a lot of homes, my house holds bits of bric-a-brac. One is the bent rear A-arm from the '65 Lotus Elan I sold a few years ago. I bought the car because a good Elan is mind-blowing. In time-honored fashion, I sold it after growing too familiar with the Sisyphean job of keeping an old Lotus healthy.

You wake up one day and notice the race tires in the basement are dry-rotting, the project car is covered in dust, the bike is full of stale gas.

The A-arm was barely bent, but corrosion suggested it had been like that for a while. Maybe the previous owner didn't know. Maybe, I thought, as I cut my hand wrestling with the Elan's frame, he was just too smart to fix it. The recipes for mind-blowing too often include a pound of flesh. Who hasn't cheated the mix a little?

At any rate, the car found a new owner. I hung the old A-arm

JOE WINDSOR-WILLIAMS

ILLUSTRATION BY **KYLE T. WEBSTER**

on my office wall as a reminder: At worst, saying yes brings lessons. No just gets you what you've already got.

Which isn't to say you can't lose ground. Last Saturday, I sauntered into the living room and opened my Netflix queue. *Huh*, I thought, *I've watched everything on the list.* Then a brief moment of alarm: *Wait. No one in history has ever watched their entire Netflix list. That would require months at home doing nothing, and . . .*

The next morning, I hopped in the car and aimed for the hills. Despite having a few good excuses not to.

I live in Seattle, a city with car ferries. One carried me from town just after dawn, to a road snaking through the Olympic Mountains. It began to rain on the ferry and didn't stop until that evening, as I pulled back into the driveway. Smoky weather, with fog weaving through the firs at eye level. The kind that reminds you you're moving.

It ended up being eight hours behind the wheel. Not much, but a start. Lying in bed that night, oddly calm, I could still smell the wet trees.

It's funny, the things you do to ward off your bad habits. Sometimes it's nothing more than informing others of their presence. As if communal awareness keeps things at bay. I don't know if these words are that. But I do know that lately, I've been thinking a lot about that ditch. And that the TV needs to go unplugged for a few months.

Can't imagine I'll miss much. At minimum, I've mapped out every inch of that couch. ■

Sam Smith is an editor at large for R&T. *Born in Kentucky, he prefers Blanton's for heavy thinking.*

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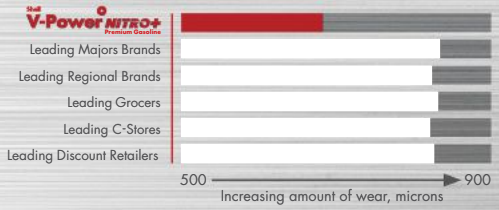

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The Accidental Miata Enthusiast

AND NOW A FOURTH GENERATION TO PONDER.

SIDE GLANCES BY PETER EGAN

IF YOU WERE A SPACE ALIEN (and I'm not saying you are) who somehow got off course last week and crash-landed in the creepy, mist-shrouded bog near our rural Wisconsin home, you might have sent the following report back to your home planet: "All earthlings drive around in small, agile pods called the MX-5 Miata."

An understandable conclusion, because—through no fault or plan of my own—all four generations of the MX-5 have come zooming up our driveway in the past five days. We are suddenly Miata Central. The invasion started last Tuesday, when *R&T* editor Alex Kierstein stopped by with a brand-new, fiery-red 2016 Mazda Miata test car he'd driven from our offices in Ann Arbor, Michigan. Finally, a chance to see one of these temporarily rare, fourth-generation beasts in person. And drive it.

With him was our former *R&T* colleague John Krewson, who lives in nearby Verona, Wisconsin. John was driving his own dark-green, high-mileage 1999 Miata—a second-generation car that runs great but appears to have had the paint on its hood toasted by a nuclear weapon. Naturally, the three of us spent the day batting these two cars around the countryside, conducting a kind of unofficial, personal comparison test. And then John and Alex took my own first-generation Miata out for further rumination on progress and its vicissitudes.

Right after those guys left, my friend Doug Harper, a sociology professor from Pittsburgh, showed up for a visit in his Icy blue 2008 third-generation Miata, a beautiful low-mileage example he bought last year. Just after he'd sold me his old one.

Yes, as you may have gathered, I'm a Miata owner again. I could hardly avoid it. Just when I'd dedicated my life to the single goal of saving for a Morgan project car, I got a call from Doug: "How would you like to buy my Miata?"

Hoo, boy. I knew the car well, as I'd helped him drive it across the U.S. a few years ago. It is a 1991 British Racing green special edition with tan leather interior and about 48,000 miles on the odometer—which still works after 24 years because it is . . . well, Japanese. We won't say "not British," because I'm a British-car buff and easily offended. Anyway, it is rust-free, with only minor interior wear and a few tree-sap stains on the hood.

"Why are you selling it?" I asked.

"I'd like a newer model," he said. "I've been dating a woman who says she won't ride in a car without a passenger-side airbag."

I stared into space and tried to wrap my mind around that caveat. When Barb and I were dating in college, I courted her in a Triumph TR3 that had military-surplus lap belts bolted to a lacy sheet of rust we called "the floor." My idea of safety was to use big washers on the seatbelt anchors. Women were made of sterner stuff in those days. At least those who survived were.

"Also," Doug added, breaking into my reverie, "I would just like to have something newer. My '91 has a few rattles, and it's a little busy on the highway with just the five-speed transmission. I think a newer model would be nice for longer road trips."

I had to give him that. Every generation Miata has been just a bit roomier, smoother, and more refined for road travel, and the six-speed was a nice option on the highway. Still, I liked the simplicity and slight rawness of the first generation. And the looks.

"How much do you want for it?" I asked.

"Five thousand dollars."

EGAN: NICK BERARD

If I had to flip a coin to pick a Miata for a cross-country trip with mountain roads thrown in, I'd cheat and use a two-headed coin to make sure I got this latest version.

Hmm. Quite reasonable for a nice BRG car. A big setback, however, for the sacred Morgan Fund. Still, life is short (as I always say when I want something), and here was an opportunity for a fun road trip. Barb and I could fly to Pittsburgh, spend a weekend with Doug, and then drive home on some of the nicest roads in America. Also, if I eventually had to sell the Miata to finance the Morgan project, I could probably find a buyer. All this went through my head in seconds.

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Side Glances CONT.

So off we flew, check in hand.

Great trip, too. We took a detour through Blue Ridge country, where the car seemed to have been made for those sinuous roads, then headed back across the bluegrass country of Tennessee and Kentucky. We did almost the whole trip top-down, but on a few hot afternoons put the top up and turned on the A/C. It rained one day, and even the wipers worked! And this in a car that strongly resembled our old Lotus Elan. The only aggravation was from those grating rattles Doug had warned me about.

When I got home, I found a broken wiring-loom bracket tap-tapping on the firewall like Poe's raven and some missing rubber vibration dampers on the creaking inner-hood structure. I fixed them, and the car has sounded solid and smooth since.

I've become quite addicted to it, which I wasn't sure I would. I owned another 1991 Miata about 15 years ago. It had spent winters sharing a heated garage with a small, nervous dog that . . . well, never went outside. So the upholstery had picked up a dog-kennel smell that could not be eradicated by modern chemical science, sunlight, or perfumed dryer sheets strewn under the seats. I sold the car without much regret after one summer.

But this is . . . a happy car. Everything feels good. Maybe it's the aftermarket Konis and the shock-tower brace or the BRG paint or the fact that the seats smell like leather. Or maybe it was that drive through the beauty of West Virginia, where the car's compact size and perfect nimbleness saturated my brain with positivity. In any case, by the time we got home, I had no intention of selling the Miata. The only other car I've enjoyed this much on mountain roads was my 2001 Porsche Boxster S—which was slightly more expensive to buy and repair. The Miata feels—and so far is—bulletproof.

How does the fourth-generation car compare?

Well, it's got more of everything, except bulk. The car's about 150

pounds lighter than the last generation and a little shorter. It's much quicker than my old 1.6-liter version (0–60 mph in 6.1 vs. 9.5 seconds), and the 2.0 twin-cam four revs with an even glassier smoothness all the way to redline. The chassis and body have a solid, more unified feel that, along with the six-speed, makes the ride calmer and more settled on the highway. However, I prefer the lower window line/elbow rest of the old cars.

Styling? Let me just say that the more a sports car mimics the Lotus Elan/Jaguar D-type school of smooth, flowing simplicity, the better I like it. And my idea of a good dash is the instrument panel in our old Piper J-3 Cub. So it may take a while to get used to the new Miata's angular dash and more aggressive and muscular body. Kids along our route, however, actually cheered from the school crossings. Give me time.

Dynamically, the new car works beautifully. It's lost none of that essential Miata-ness: easy, flexible torque; intuitive steering; a great gearbox; comfortable all-day seats; and balanced handling. And the new 155-hp Skyactiv engine gets better mileage.

If I had to flip a coin to pick a car for a cross-country trip with mountain roads thrown in, I'd cheat and use a two-headed coin to make sure I got this latest version. It's easily as much fun to drive as the early cars, but simply less tiring.

Also, it's new.

Old Miatas, like mine and Krewson's, are getting older. That's why Doug sold me his, come to think of it. Never mind the airbag story. After driving his immaculate, like-new third-gen car around the hills this week, I'm fighting to stay away from eBay and Craigslist. He only paid $13,000 for it.

But I have a Morgan project car to feed, and it needs many, many parts. The '91 BRG still warms my heart. It's the closest thing to free—and trouble-free—fun I've ever owned with four wheels attached. ■

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THE ROAD & TRACK TEST | 2015 SHELBY SUPER SNAKE

NUMBERS GAME

AT $100,000 AND 850 HP, IT'S THE BIGGEST, BADDEST MUSTANG SHELBY MAKES. BUT IS IT TOO MUCH OF EVERYTHING?

BY COLIN COMER | PHOTOGRAPHY BY RICHARD PARDON

THE ORIGINAL SHELBY AMERICAN crew has long been characterized as a bunch of hot-rodders. Yes, most of them started out in 1960s Southern California, but Carroll Shelby didn't pick great hot-rodders—he found guys who had incredible talent, then gave them free rein to use it. Their passion, and a lot of trial and error combined with genius, produced world-beating cars that were more than the sum of their parts.

Take, for example, the 1965 Shelby GT350. Concerned that his new Mustang would quickly fade from the spotlight and be seen as a boring "secretary's car," Ford boss Lee Iacocca hired—no, commanded—Shelby to build a performance Mustang eligible for competition. The result, the 1965 GT350R, went on to win an SCCA national championship and help save the Mustang brand.

As time passed, the focus shifted. The rough edges of Shelby Mustangs were softened, resulting in cars with far more comfort and far less athletic ability. Ford moved production to Michigan in 1967, but even then, no Shelby vehicle sold in large numbers. As much as people like hard-core performance cars, few ever sign up for the reality.

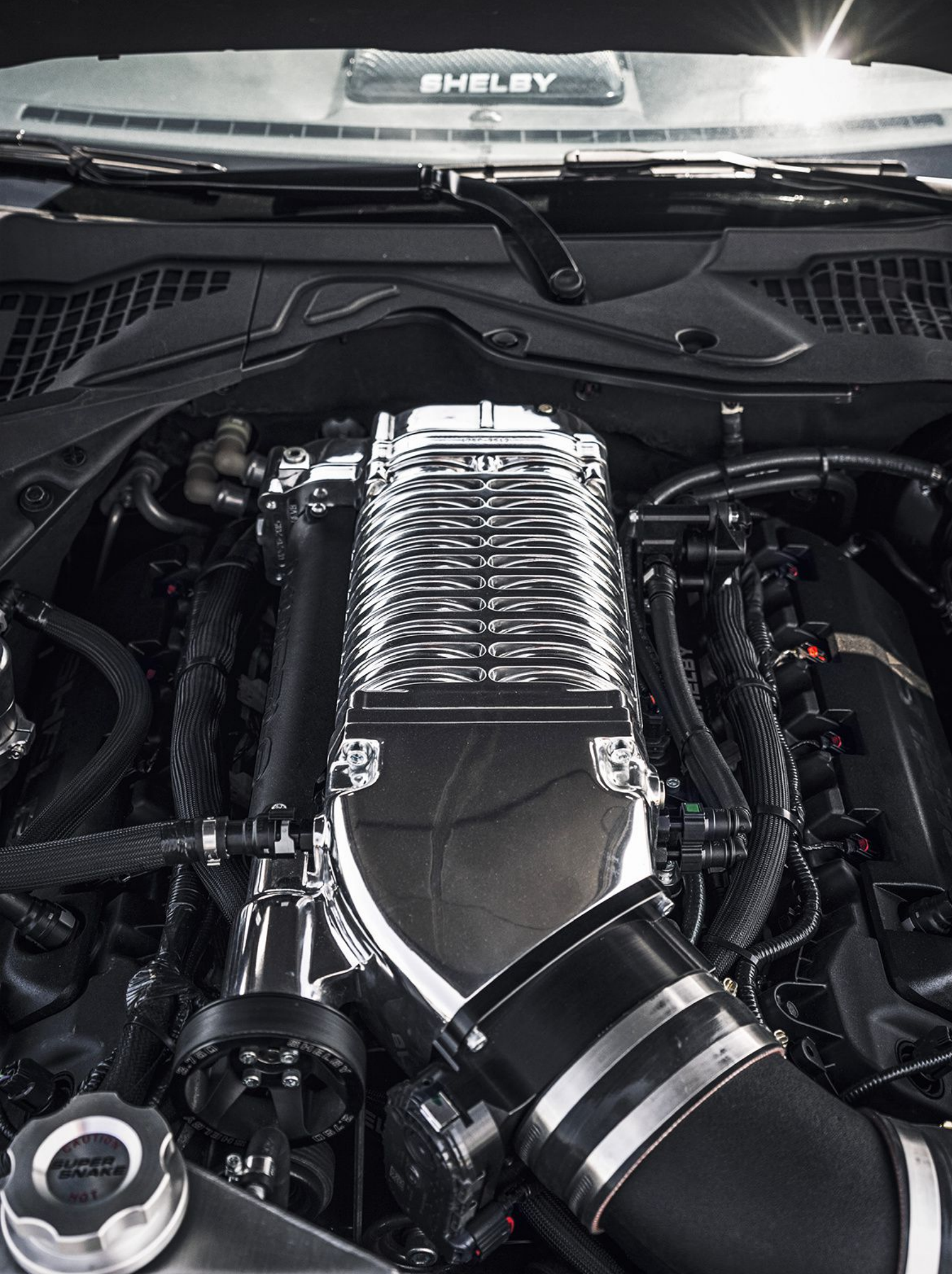
The Super Snake moniker dates to 1967. It was first applied to a GT500 prototype fitted with a 427 V-8 in GT40 Mk II trim. Shelby planned to sell 50 such cars, but the idea was scrapped when it was discovered that they would need to be priced at $7500—427 Cobra money—to turn a profit. (The prototype made history as part of a 500-mile Goodyear tire test, clocking a 170-mph top speed and a record 142-mph average.)

The name was next used in 1968, on a twin-supercharged 427 Cobra touted in a classified ad penned by Shelby's right-hand man, Al Dowd, as "Carroll Shelby's Personal Super Snake." It was one of two such cars built—the other was sold to Bill Cosby, who rejected it. That car killed its second owner, careering off a cliff when the throttle stuck open.

Concerned the Mustang would be seen as a "secretary's car," Ford commanded Shelby to build a performance edition. Few buyers signed up for the reality.

By the end of 1970, Shelby Mustangs of any strength were no more. The Super Snake designation lay dormant. In 2003, Shelby and Ford mended a long-broken fence and rejoined forces. In 2006, they developed the first new Shelby Mustang in more than three decades, when Shelby, now located in Las Vegas, tuned 500 GT-H Mustangs for rental-car giant Hertz. They brought a similar car to the masses in 2007—

Gleaming Whipple blower dominates underhood, underwhelms on track.


SHELBY
SUPER SNAKE

The brakes are a battle—you find yourself constantly trying to breathe on the pedal so as not to remove the windshield with your head.

the Shelby GT—and, for owners of Ford's then-new GT500, a "Super Snake" conversion package offering either 600 or 725 hp. This was a posttitle conversion, meaning you bought the car and then gave it to Shelby for modification.

The Super Snake has been available in one form or another since. Which brings us to the car seen here—the 2015 Shelby Super Snake—and today's Shelby American. In keeping with tradition, there's nothing subtle about the 2015 model. The car has the word "Shelby" on its exterior no fewer than 25 times. (The 1968 GT500 featured the word twice, and the original 1965 GT350 didn't use it at all.) If you count engine and interior badges on the 2015, you'll see the name 42 times. Branding has come a long way.

The "entry-level" Super Snake package costs $49,995, on top of the 2015 Mustang GT that you supply. A host of Ford Performance components lie under the hood and under the car, including a Roush-sourced 2.3-liter supercharger, which boosts the GT's 5.0-liter V-8 from 435 hp to 627 hp. There's also an exhaust, a handling kit, 3.73:1 rear-axle gears, half-shafts, and a short-throw shifter. Shelby fits cooling upgrades, 20-inch Weld Racing wheels, and six-piston Wilwood front brakes. Not bad, but why stop there? Our test vehicle had the $54,999 "750+ HP" package, and that extra five grand goes a long way. It replaces the Roush supercharger with a larger huffer (our car had a massive, 2.9-liter Whipple) and adds more cooling upgrades, brake cooling, and a one-piece driveshaft. No internal engine modifications are made. You also get a carbon-fiber hood, front splitter, rear spoiler, rear diffuser, and rocker panels; a billet grille; a dash plaque; and a three-gauge carbon instrument cluster on top of the dash.

Shelby treatment includes carbon-fiber hood, black aluminum billet grille, racing stripes. And, of course, huge Super Snake badge.

Amazingly, there is an option list beyond all that. Our test car appeared to have most of them: painted carbon bits, four-piston rear Wilwoods, and leather seats.

Full disclosure: I love Shelbys. I've owned, driven, and raced them for years. I wanted to love this Shelby and its numbers. Unfortunately, that didn't happen.

The Super Snake is definitely a fast car. The numbers it laid down at our test track are strong by any measure. Problem is, they should have been better. A stock Camaro ZL1 is quicker. In the Snake's defense, its gearing is short. We shifted to fifth to clear the quarter-mile, which hurt elapsed time. But there's more to it.

Sending 640 lb-ft of torque to 20-inch Pilot Sport Cup 2 tires creates a smoke machine.

This is where things get murky, as they often do with tuner cars that lack SAE-certified horsepower and torque ratings. Despite the "750+ HP" billing, Shelby told us that our particular test car produces 850 hp at the crank. But the car's 12.3-second, 116-mph quarter-mile run speaks to a horsepower number far less than 750, let alone 850. Confused? So were we. Consider the Dodge Challenger SRT Hellcat, with its SAE-certified 707 hp and a curb weight 627 pounds above the Shelby's. The last Hellcat we tested did a 12.0-second quarter-mile at 124.8 mph—enough to make any old drag racer doubt the Super Snake has anywhere close to the Dodge's beans. With a superior power-to-weight ratio, the Super Snake should be traveling faster than the Hellcat in the quarter. The culprit here may be excessive heat soak, a tune on the safe side, or electronics otherwise struggling with the newfound horsepower.

As for braking performance, the Super Snake can definitely stop. It has an abundance of caliper and friction area, and even fancy floating rotors. What the numbers won't tell you is how difficult the brakes are to modulate. They're nearly an on-off switch. When you're on them, it's obvious the Mustang's factory anti-lock calibration can't compensate for the Snake's change in brake torque, its front to rear balance, or its larger, staggered wheels and tires.

With a mass-produced car, these things are all carefully tuned. *R&T*'s road test editor, Robin Warner, was on hand for this test; in a previous life, he helped calibrate ABS, traction-, and stability-control programming for Ford, including the last Mustang Boss 302. His thoughts paralleled mine: The Super Snake's software is struggling with its hardware.

On the skidpad, the Shelby returned numbers you'd expect from a 2015 Mustang with big tires, stiff springs, and big anti-roll bars. The only issue we encountered was a disturbing one—the car was virtually impossible to keep from spinning once it stepped out. In the end, however, we saw an impressive 0.98 g of lateral grip.

AFTER THE TEST TRACK, WE DROVE TWO HOURS NORTHWEST, to Michigan's Grattan Raceway road course. This lumpy, demanding 2.0-mile track gave us a controlled environment that mimicked real roads.

Going into this test, I expected the car to be unruly, unable to put all that power to the road. That wasn't the case. The Shelby never felt loose. But the real problem wasn't the numbers. It was how the package felt. The brakes are a battle—you find yourself constantly trying to breathe on the pedal so as not to remove the windshield with your head. The cross-drilled and slotted floating rotors are quite loud and noticeably rough in operation. Our test car surged under light throttle and offered pronounced bucking in sixth gear when accelerating from around 3000 rpm. And while it may have been engine tuning—or perhaps something to do with the car's half-shafts or driveshaft—our Snake seemed to have considerable driveline slop, along with a fair amount of vibration under load.

You have to assume that these things can and will eventually be tuned out by Shelby. Our test car was the first Super Snake built based on the new Mustang. But for now, the car feels like a work in progress.

The morning of our track day brought heavy rain. I began questioning my marching orders to take a supercharged monster to a drenched, 10-turn roller coaster that's a favorite of small-bore sports-car and motorcycle racers. But amazingly, the Super Snake was predictable in the wet. And reasonably capable at a good clip.

The track dried by late morning. Before heading out, Warner and I discussed Grattan lap times. He recalled a Ford factory driver turning a 1:28.6 in a 2012 Boss 302 Laguna Seca (444 hp and 3690 pounds). My handicap—beyond not wanting to crash Shelby's Super Snake during its first media appearance—was that I had never before raced at Grattan.

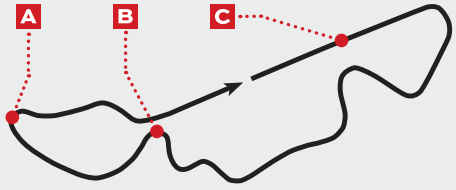
Once the car was wired up with timing gear, I strapped in. The Shelby pulled hard. As on the road, the abrupt brakes were an issue. Into Turn 1, Grattan's heaviest braking point, the Mustang's rear would lift, and its ABS would occasionally interfere with odd activity. But the most unsettling section was just over the track's infamous jump, before the slower, right-hand

Turn 5. Even when I waited for the wheels to touch the ground before hitting the brakes, the car would engage full ABS, requiring speed scrub the old-fashioned way—by pitching the Mustang sideways.

Through Grattan's Monza-style bowl, the Super Snake's rear suspension would bottom out and clunk, but it never got worse, so I drove through it. The chassis is heavily biased toward understeer, making a tight circuit like Grattan that much more challenging. A moderate stab of the throttle would usually rotate the rear enough to help, while a harder stab would rotate the rear a lot further. (And sometimes too far to get back.)

All of this made the Shelby a challenge to hustle. It doesn't perform like a car built for road racing, because it isn't. And while the car never got hot or threatened unreliability, it just didn't feel polished or composed. It felt like it needed less front anti-roll bar or less rear tire, and certainly a more balanced brake package. On a faster track, this would be far less noticeable—and the car's horsepower would be far more noticeable, shrinking lap times.

In the end, I was able to put down a 1:30.86 lap on the optional Michelin Pilot Sport Cup 2 tires. That's not slow, though it is slower than that factory Boss. The Shelby probably had another second or two in it, but given its chassis, anything faster felt like unnecessary risk.



TRACK NOTES

A. *Slowest corner on the track reduces us to just 39 mph.* **B.** *We peaked at over 1.3 g's around the banked hairpin.* **C.** *Top speed was 143.3 mph on the straight.*

Yes, the Super Snake needs to go to finishing school. Yes, it consists mostly of parts that anyone can buy and bolt onto their Mustang. Yes, it probably makes 750 hp in the right conditions, and maybe even 850 hp, with the right tune. (Schedule conflicts kept us from dynoing the car during its time with us.) And it isn't the best choice for a track-day car.

It's worth considering, however, that the Super Snake name has never been about balance. Carroll's two "Super Snake" Cobras were claimed to have 800 hp, but they also had a reputation for throwing blower belts and never running right. To say nothing of killing half their owners.

Those cars were too much—and for the man himself, that was just right. This Super Snake is too much of everything, but it isn't being marketed as the choice for socially awkward rich guys. This is the biggest, baddest Mustang that Shelby makes, aimed at drivers who want people to notice them. Is it a true Shelby? Absolutely.

Do people still care about this old brand? Judging by the mile-long wall at Shelby American's Las Vegas headquarters, where markers are provided for visitors to sign and there isn't an empty spot anywhere, or by the seemingly endless owner's clubs and forums, they do. It's also worth remembering that the Shelby American products everyone remembers—the Sixties cars—are now out of reach for ordinary people. This is also a modern car, with A/C and comfortable seats. It was modified by hand, by the company that Carroll used to run, produced in small numbers, and it gains owners entry into an exclusive club . . . that's an immeasurable bonus.

I wanted to love this car. I wanted the numbers to be great, not just really good. I'm still in love with the brand and the fact that Super Snakes exist. Because God knows Carroll Shelby wasn't perfect, and neither were his cars. But 50 years later, we can still appreciate the fact that he created something unique. And that's what the big, bad, and untamed 2015 Super Snake is, faults and all. ■

PERFORMANCE REPORT, P. 46 ▸

POWER TRAINED

With a substantial 279-horsepower engine and Variable Cylinder Management™ to help maximize fuel efficiency,* the new 2016 Acura RDX gives you performance that's exhilarating and responsible. Hit the start button, and you'll see how much more satisfying power is when it's smartly used.

THE NEW 2016

RDX

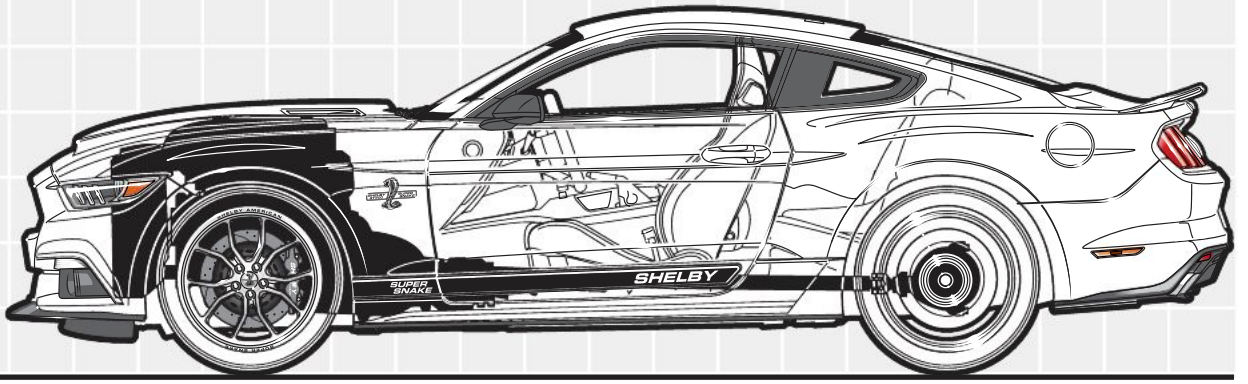
DRIVE LIKE A BOSS

RDX with Advance Package shown. *20 city/29 highway/23 combined mpg rating for RDX FWD model. Based on 2016 EPA mileage ratings. Use for comparison purposes only. Your actual mileage will vary depending on how you drive and maintain your vehicle. ©2015 Acura. Acura, RDX, and the stylized "A" logo are registered trademarks of Honda Motor Co., Ltd.

OFFICIAL PERFORMANCE TEST REPORT

2015 SHELBY SUPER SNAKE

SCALE: 10 IN. DIVISIONS
ILLUSTRATION BY TIM BARKER
© ROAD & TRACK/HEARST MAGAZINES



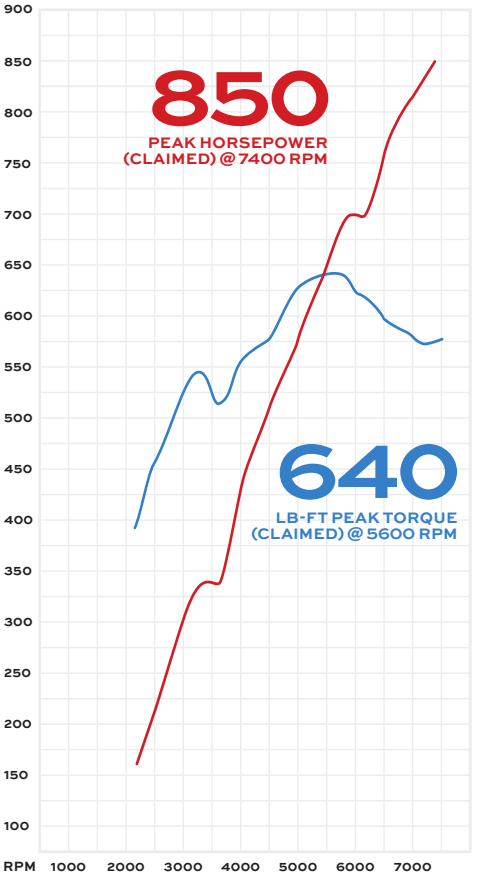
SPECIFICATIONS

PRICE

BASE	$86,920
AS TESTED	$96,716

ENGINE

LAYOUT	front, longitudinal
CONFIGURATION	V-8
INDUCTION	supercharged
MATERIAL	aluminum block and heads
VALVETRAIN	DOHC, 32 valves
DISPLACEMENT	4951 cc
BORE x STROKE	92.2 x 92.7 mm
COMPRESSION RATIO	11.0:1
FUEL CUTOFF	7400 rpm
FUEL DELIVERY	port injection



TRANSMISSION

DRIVEN WHEELS	rear
TYPE	6-speed manual
FINAL-DRIVE RATIO	3.73:1, limited-slip differential

GEAR	RATIO	MAX SPEED (RPM)
1	3.66:1	44 mph (7400)
2	2.43:1	66 mph (7400)
3	1.69:1	95 mph (7400)
4	1.32:1	122 mph (7400)
5	1.00:1	161 mph (7400)
6	0.65:1	200 mph (6000)

STEERING

ASSIST	electric
RATIO	16.0:1
TURNS, LOCK-TO-LOCK	2.8
TURNING CIRCLE	40.0 ft

SUSPENSION

FRONT/REAR	strut-type/multilink

BRAKES & TIRES

FRONT	15.0-in vented rotors, 6-piston fixed calipers
REAR	14.0-in vented rotors, 4-piston fixed calipers
TIRES	Michelin Pilot Sport Cup 2
SIZE	F 265/35R-20 R 305/30R-20

BODY & CHASSIS

CONSTRUCTION	unit
MATERIALS	steel, aluminum, and carbon fiber
LENGTH	188.3 in
WIDTH	75.4 in
HEIGHT	53.4 in
WHEELBASE	107.1 in
TRACK F/R	62.3/64.9 in
DOORS/SEATS	2/4
EPA CLASS	subcompact
CARGO CAPACITY	13.5 ft³
DRAG COEFFICIENT x FRONTAL AREA	—

WEIGHT

CURB WEIGHT	3831 lb
DISTRIBUTION FRONT/REAR	56/44%
WEIGHT-TO-POWER	4.5 lb/hp

FUEL

EPA CITY/HWY	—
CAPACITY	16.0 gallons
RANGE	—
RECOMMENDED FUEL GRADE	premium

TEST RESULTS

3.9
0–60 MPH, SECONDS

12.3
0–¼-MILE, SECONDS @ 116.0 MPH

200
TOP SPEED, MPH (MFR)

0.98 g
ROADHOLDING, 300-FT SKIDPAD

ACCELERATION

1 FOOT (ROLLOUT)	0.3 sec
60 FEET	2.0 sec
ROLLING START, 5–60 MPH	4.8 sec
1/4-MILE	12.3 sec @ 116.0 mph
0–10 MPH	0.4 sec
0–20	1.0
0–30	1.6
0–40	2.3
0–50	3.2
0–60	3.9
0–70	5.3
0–80	6.4
0–90	7.8
0–100	9.3
0–110	10.8
0–120	13.3
0–130	15.7
0–140	18.8
0–150	22.8
TOP SPEED (DRAG-LIMITED, MFR EST)	200 mph

BRAKING

60–0 MPH	113 ft
80–0 MPH	197 ft
FADE	none

HANDLING

ROADHOLDING	0.98 g
BALANCE	moderate understeer

Shell V-Power NiTRO+ Premium Gasoline | The official fuel of ROAD & TRACK

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CARS & ENGINES
USE ROYAL PURPLE

Royal Purple's unique blend of additives, such as our proprietary Synerlec® technology, enable Royal Purple synthetic products to outperform leading synthetic and conventional lubricants.

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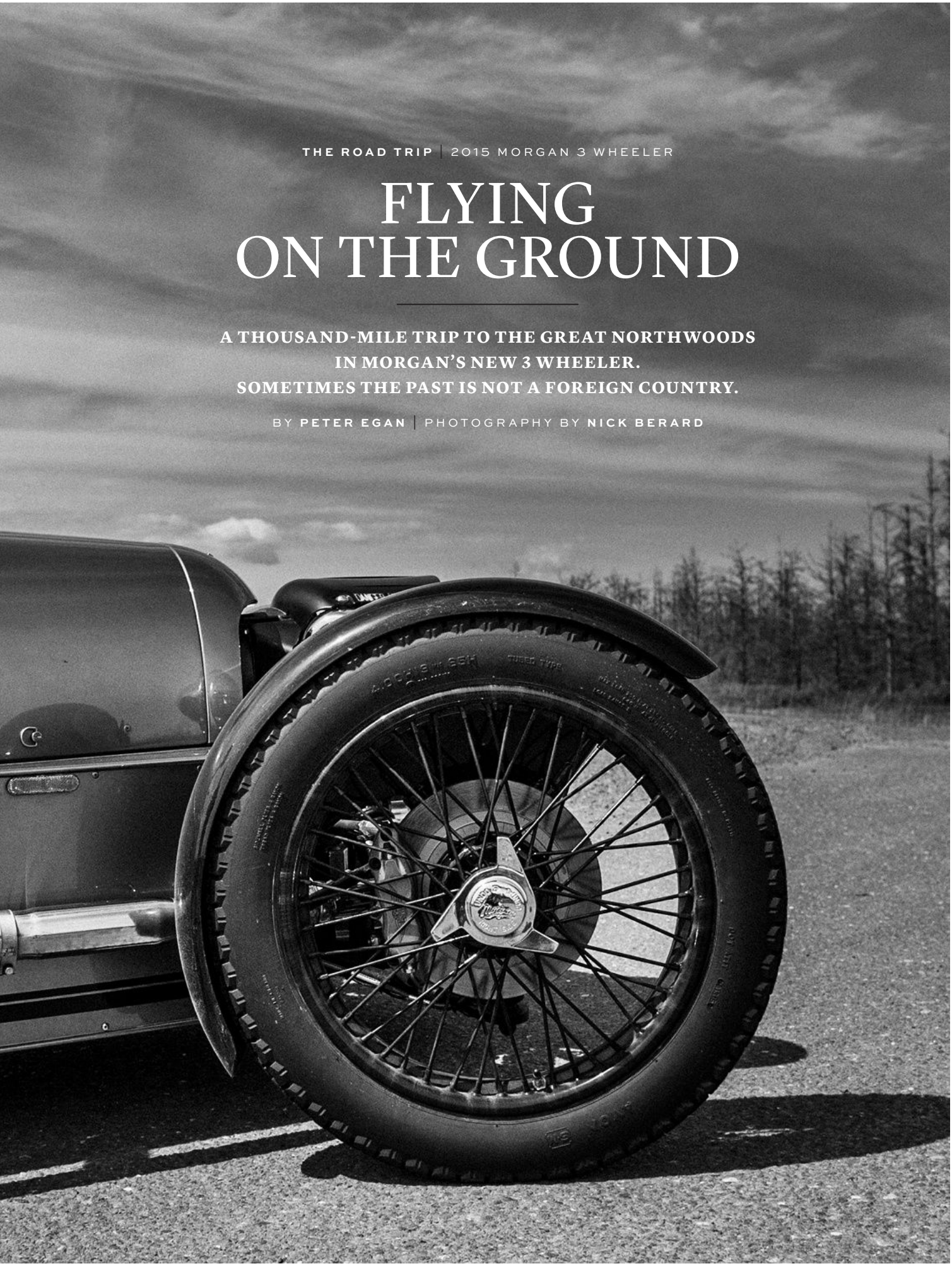
FLYING ON THE GROUND

A THOUSAND-MILE TRIP TO THE GREAT NORTHWOODS IN MORGAN'S NEW 3 WHEELER. SOMETIMES THE PAST IS NOT A FOREIGN COUNTRY.

BY **PETER EGAN** | PHOTOGRAPHY BY **NICK BERARD**



WHILE PUTTING SOME BREAK-IN miles on a 2015 Morgan 3 Wheeler two weeks ago, I pulled up in front of a little café along the Rock River, not far from my rural Wisconsin home. Even before I could shut off the engine, people came pouring out of the restaurant as if I'd fired a stink bomb through the window. Four or five customers, along with the cook and the waitress, quickly gathered around the car.

A large man in bib overalls hovered over me—providing some welcome shade—and exclaimed, with flawless Steve Martin delivery, "I saw you comin' down the road and I said to everybody in the café, 'WHAT THE HELL IS THAT?'"

This scene—or some variation of it—was to be repeated many times during the thousand-mile loop my wife Barb and I took through Wisconsin last week. Most people had no idea what the Morgan was—or, indeed, had ever heard of one—but they were instantly attracted to it, moved by some combination of its vintage mechanical presence and rightness of line.

I know how they felt.

When I heard the news four years ago that Morgan was going to bring back its "cyclecar" for the first time since production stopped in 1952, the machinery of desire immediately began to clank and whir in my brain. It was like hearing the Sopwith Camel was back in production—with a new and reliable radial engine. To a lifelong British-car buff, there was a lot of history and tradition riding on those three wheels.

The Morgan Motor Company, located in the Malvern Hills near the Welsh border, started manufacturing these things in 1910 when young H. F. S. Morgan went into the business of bolting motorcycle engines onto the front of his cleverly designed trikes. They were an instant hit because they were light, rugged, inexpensive, and fast. Also, they could be licensed as motorcycles, which saved buyers a bundle under the ever-punitive British tax codes.

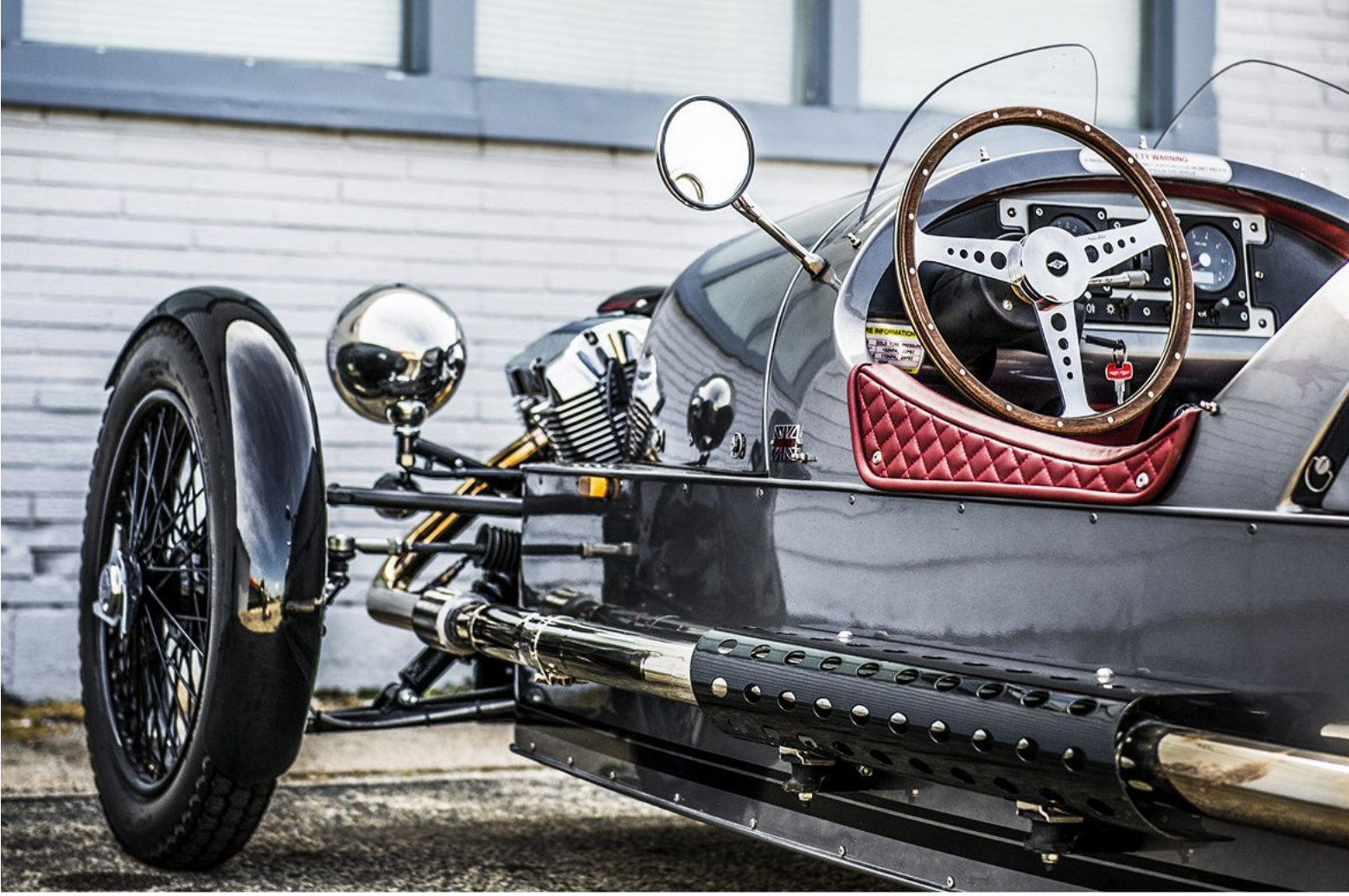
As such, they attracted everyone from working stiffs to wealthy young sports who could use them to gad about the countryside, scattering chickens. Morgans were also popular with young men of the Royal Flying Corps. One famously glamorous owner was Captain Albert Ball, England's then leading World War I fighter ace, who bought a Grand Prix model not long before he was killed on the Western Front. He called it "the nearest thing to flying without leaving the ground."

By 1936, Morgan was building four-wheeled sports cars, relegating the three-wheelers more or less to cult status among the faithful. But they reached their truly classic proportions (in my mind) with the Super Sports models of 1927–1939, and these are the cars Morgan chose to emulate most closely in the new model.

Well, actually, it was an American industrial designer from Seattle named Pete Larsen who first decided to resurrect this most English of all machines. Larsen, a builder of the vintage-looking Liberty Sidecars for Harley owners, was fascinated by the look of the old Morgan trikes. Using a Harley engine, BorgWarner T-5 transmission, and Honda Gold Wing swing arm and final drive, he built a strikingly accurate replica of a Thirties Super Sports and began to produce it as the Liberty Ace. It got some coverage in the British press in 2009, so a pair of Morgan reps flew to Seattle to take a look. They were so impressed by the Ace, they convinced Morgan to buy all manufacturing rights from Larsen. He signed everything over to Charles Morgan in 2010 and is now a Morgan dealer himself.

Morgan based its 3 Wheeler closely on Larsen's but developed it further, Morgan-style. After redesigning Larsen's steel-tube frame, it replaced the fiberglass body with a shell of hand-formed aluminum over laminated ash and then installed an S&S Cycle engine, Miata five-speed gearbox, and a British Quaife bevel box with a Harley-style belt drive to the rear wheel. It was introduced at the Geneva motor show in 2011.

Licensed as a motorcycle, reminiscent of a vintage sports car, the Morgan 3 Wheeler offers open-top motoring but little room for rain gear.



MORGAN
3

Good business decision.

When Barb and I visited the Morgan factory last year, I was surprised to learn the 3 Wheeler had passed the 1000 mark in sales (it's now up to 1500), and it accounted for about 40 percent of Morgan's output. I was impressed with the fit and finish of the thing but returned home wondering if I'd ever get a chance to drive one. The $46,667 base price, as delivered in the U.S., didn't lend itself to much trial-and-error experimentation on my part.

Morgans were popular with young men of the Royal Flying Corps. One called it "the nearest thing to flying without leaving the ground."

Shane Mustoe to the rescue.

Mustoe is a Scottsdale, Arizona, Morgan dealer who called last winter and said he'd heard from our mutual friend Bill Hall that I'd recently acquired a 1965 Morgan Plus 4 project car. "So now, you must drive the 3 Wheeler," he said. "We've got a used demo car, but I'd like you to drive a new one, because the factory has made some improvements in steering and driveline smoothness."

As it turned out, Morgan's early 2015 production was all spoken for, so Mustoe generously decided to send me the new 3 Wheeler he and his wife had ordered for their own use. It arrived on a flatbed truck two weeks ago, having just been prepped by Northshore Sportscars, the Morgan dealer in Lake Bluff, Illinois. And it was gorgeous, sitting there in our driveway.

Mustoe had added about $8000 worth of extras to the base version, including custom Lamborghini Titanium paint, mulberry quilted-leather interior, heated seats, the Bright package (polished rollhoops, headlight shells, and engine), and a wood-rimmed Moto-Lita steering wheel.

About 20 seconds after the delivery truck disappeared down our driveway, I did a quick read of the owner's manual and slipped behind the wheel for a drive. My friend Rick Olson—who pulled up in his new Polaris Slingshot three-wheeler—joined me for a ride.

Comfortable seats, plenty of legroom, and adjustable pedals set up for my six-foot-one-inch frame. Aircraft-style gauges. I turned the key, lifted the "bomb toggle" guard over the starter, hit the button, and the engine barked instantly to life. No throttle pumping called for on this fuel-injected V-twin. It's a 2.0-liter X-Wedge engine, built by S&S in Viola, Wisconsin, and it produces 80 hp at the rear wheel, with 103 lb-ft of torque at 3250 rpm. Good power-to-weight for a 1250-pound car. It idles with the regularly spaced *BANG-BANG-BANG* of a large British single rather than the offbeat shuffle of a Harley engine. Maybe it's the stereo effect of the two separate exhaust pipes on opposite sides of the car or the wider 56-degree vee used to keep those big pistons from clashing.

In any case, it has quite a beautiful exhaust note, both mellow and hard-hitting at the same time. When the engine lit up, Rick

Sounds like a machine gun. Good for 115 mph. Full-face helmets recommended.

and I looked at each other and grinned. I slipped it into first, and we headed out.

What strikes you during the first 10 minutes of driving is how "normal" the 3 Wheeler is to operate. It has a normal clutch; a five-speed Miata transmission that shifts, well, just like the one in my own Miata; responsive and powerful brakes—vented discs on the front and a drum at the rear; and quick but linear steering with nice on-center feel. Early 3 Wheelers were criticized for an excess of bump-steer that made them skittish over road irregularities, but the improved version is dead-stable, with good feedback through the wheel.

While the car is mechanically normal, there's nothing conventional about the sensations you get while blasting through the hills. The regular, concussive beat of the engine reminds me of nothing so much as my days on a .50-caliber machine-gun range at Fort Polk, Louisiana, in 1969. In corners, the car turns in crisply and takes a set while the rear end simply sweeps dutifully through behind it. The payoff comes between apex and exit, where that torque-monster engine just hammers the car out of the corner in a heady surge. The pedals are perfect for heel-and-toe, and downshifts into fourth or third are big fun.

If you get careless (or playful) with the clutch, it's easy to spin the rear tire on takeoff, but you have to get on it very hard indeed to make the rear end step out. It's astounding how much grip this thing has—especially for a vehicle with two skinny 4-by-19-inch Avon motorcycle tires on the front and a single 175/55R-16 Uniroyal RainExpert car tire at the rear. It's helped, no doubt, by its wide, five-foot front track (13 inches wider than my 1965 Morgan Plus 4's!). Weight transfer is minimal, and the car swoops effortlessly through fast corners with almost no body roll.

The only two criticisms I could come up with were moderate gear whine from the bevel drive unit—despite Morgan's new rubber isolation mounts—and a hard-to-reach seatbelt buckle that's buried next to your hip. (Remarkably, a thousand miles later, these were still my only complaints.)

When Rick and I returned from our drive, Barb greeted us in the driveway. "Well, what do you think?" she asked. "Will it be okay for our trip?"

Quoting Lawrence of Arabia, I just grinned and said, "It's going to be fun."

There was, of course, the question of luggage. The Morgan has what appear to be two sizable trunks, but the rear turtle-deck swings upward to reveal a fair amount of wheel-well intrusion, and the bonnet conceals a large, cylindrical oil tank and the battery, without much open space. But the passenger-side footwell is so deep that even the long-legged cannot plumb its depths. A small duffel bag fits easily.

In any case, Barb and I are used to traveling light. We once spent six weeks touring the U.S. in our 1945 Piper J-3 Cub, which had 20 pounds of

Morgan 3 Wheeler

PRICE $46,667
POWERTRAIN
2.0-LITER V-TWIN,
80 HP, 103 LB-FT; RWD,
5-SPEED MANUAL
WEIGHT 1250 LB
TOP SPEED 115 MPH

Light, rugged, and effortlessly fast. At home in the hills of Wisconsin or Wales.

total allowable luggage—to include a tool kit and pup tent. Also, we are seasoned motorcyclists. My shaving kit and our rain gear and sweatshirts went under the rear deck, and everything else made it into the footwell.

Did someone say "rain gear"? Yes. The 3 Wheeler has no top, so we'd be in full motorcycle-touring mode. Rain suits and helmets with face shields. There's no space to store helmets, so we'd have to wear them. Just as well, on those long days in the sun and wind. And rain.

On a clear and sunny June morning, we finally headed down the driveway, destination the great Northwoods. We were going to pay a visit to our friends Jeff and Nancy Craig, who have a beautiful rustic home on a small lake near Iron River, Wisconsin, just south of Lake Superior. On the meandering route we'd planned, it was about 500 miles away.

We had to go there, because their place is Romantic Vehicle Central. The Craigs own about 10 vintage wood-and-canvas canoes, a classic wood Herreshoff 12 ½ sailboat, a wood-fired steam launch (note the prevalence of wood here), and three vintage Velocette motorcycles. Jeff is also a former Morgan owner who helped bring my own Plus 4 back from Colorado a few months ago. I think his exact words were, "If you get that Morgan 3 Wheeler to test and don't drive it up here for a visit, I'll kill you."

Okay, not a direct quote, but I think that was the gist of it. We headed north, taking no major highways. The Morgan cruises effortlessly at 70–80 mph, but we didn't want to sully its spirit (or ours) with interstates or traffic jams. So we took back roads past Taliesin, Frank Lloyd Wright's famous home, near Spring Green, then followed the beautiful and nearly empty Highway 56 for a visit to the S&S factory in Viola, where we and our Morgan were greeted warmly.

On a factory tour, S&S engineering manager Jeff Bailey showed us the X-Wedge engines being hand-built in this very high-tech facility, which is tucked back in a green valley that would make H. F. S. Morgan feel right at home. (And me, too; it's 25 miles from where I grew up.) One big challenge in adapting these engines to the 3 Wheeler, Bailey said, was the V-twin's big hits of torque, which caused rapid wear in Morgan's

mechanical, shock-absorbing compensator unit between the engine and clutch. They had to change over to a larger, rubber-based cush drive, which is what we have in our car.

Heat was another early problem. The engines ran cool at the front and hot at the back, so an air scoop was added, along with a fan that blows air forward through the cooling fins at low speeds if the engine temperature exceeds 200 degrees. Problem solved.

Before we left, S&S president Paul Langley (a Brit!) came to see us off and had the staff bring around Morgan's own test-mule 3 Wheeler, a green one with an RAF paint scheme and very loud exhaust pipes. Suddenly, our own twin-.50s sounded more like a set of Vickers .303s. With silencers.

As we headed northwest toward the Mississippi River on Highway 27, a deer bolted from the woods, straight at us. As I swerved, the deer caught its footing and leaped cleanly over the back deck of our car, without touching it. Not even a hoof-print. It isn't every day I get to look at the underside of a deer's jaw while maneuvering a car. Another good case for helmets, I guess. Full-face helmets.

On the way to Trempealeau, we stopped at the Mindoro Cut, a gap hand-hewed through solid stone by pioneers, so they could get their wagons across the ridge. Two high school kids were skateboarding there. We asked if they wanted to be photographed passing the Morgan downhill, and they enthusiastically agreed. I gave them both rides in the 3 Wheeler, and they thanked us profusely. Nice kids, smart and polite. Somehow our two activities seemed closely related, as if humans were intended to segue smoothly from one to the other. Or maybe I'm just immature.

We stopped for the night in Trempealeau and had dinner at the Historic Trempealeau Hotel, seated on a screened porch overlooking the Mississippi, with barges and trains going by. The view looked like a Thirties post-office mural titled *Transportation for a Growing America*. After dinner, as I snapped on the Morgan's tonneau cover, a man walked by and said, "Big storm comin' tomorrow."

He wasn't kidding. Let's just say we got to try out those rain suits. It poured like the end of the world all morning, but our heated seats helped take some of the chill out of the damp leather

beneath our glistening rain suits. Fortunately, the car handled remarkably well. Those narrow front tires don't aquaplane, and the rear is a rain tire, so I could hardly tell the road was wet. Still, I didn't push my luck in this deer-infested country.

The sky was clearing when we stopped at Eau Claire for fuel, and the Morgan created its usual sensation at the gas station. Everyone wanted to know how fast it would go (115 mph) and what kind of fuel mileage we were getting (about 30 mpg). Most were impressed with 115 mph but disappointed in 30 mpg. I decided at future stops to say, "70 mpg," just to let people live happier vicarious lives.

As we crossed the Chippewa River, the scenery suddenly metamorphosed into the woods of Longfellow's *Song of Hiawatha*—tall pines, clear lakes, and rock cliffs. Also Point and Leinenkugel's beer signs glowing in roadhouse windows. Another planet. In Iron River, we were intercepted by Jeff Craig, who was out on his Triumph Bonneville looking for us. He led us back on a winding gravel road to their lodge, and we climbed wearily out of the car, wind-dried and happy. When his wife came home, we all went out for the traditional (nay, sacramental) Friday-night Wisconsin fish fry at a lakeside supper club.

In the morning, Jeff and I took turns driving the Morgan around the back roads for a couple of hours. When we got back to his marvelous museum/garage, he shut off the engine and said quietly, "I must have one of these."

Then he added, "This thing answers a lot of psychological needs, all in one vehicle. It's equal parts Gipsy Moth biplane, Hacker-Craft mahogany speedboat, classic motorcycle, and vintage sports car. But it's new and modern and doesn't need to be restored." We both casually gazed around his shop, silently appraising its contents and wondering what might be sold and condensed into a Morgan 3 Wheeler. I confess I've done a bit of the same since I got home.

"It's equal parts biplane, mahogany speedboat, classic motorcycle, and vintage sports car. But it's new and modern and doesn't need to be restored."

Barb and I spent three more days on the road. We visited our friends Mike and Linda Puls at their lake cottage near Springstead for a day, stopped for another night at a restored log-cabin B and B near my hometown of Elroy, then pulled into our driveway the next day, having covered 1070 miles. No mechanical troubles, no visible oil consumption in five days on the road. I spent a day cleaning and detailing the Morgan, and it was trucked back to its rightful owners last Tuesday.

I watched it go down the driveway on the flatbed, thinking to myself that people sometimes call the traditional Morgan four-wheelers "the last of the real sports cars." But you could probably make a case that the new 3 Wheeler is the latest claimant to that title.

Because it's licensed as a motorcycle—and bought by people who willingly accept some of the implied austerity and risk—it can be sold without bumpers, doors, windows, locks, a center brake light, a safety-glass windshield, airbags, buzzers, A/C, a heater, defrosters, headrests, wipers, windshield washers, seat adjusters, a radiator, a sound system, a water pump, hoses, a differential, half-shafts, wide front tires, rear fenders, a fourth wheel and brake, and a hundred other things.

The upshot is a light, agile machine, neither car nor motorcycle, that drives like nothing else in the world. And it offers more kinetic fun—and more pure charisma—than any car I've driven.

English novelist L. P. Hartley once wrote, "The past is a foreign country; they do things differently there." The Morgan 3 Wheeler is one of those rare chances to go back and find out what we've lost. ■

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Truth in Engineering

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It doesn't look like a hybrid. It certainly doesn't drive like a hybrid. And with its class-leading horsepower* and impressive 7.5 second 0-60 mph time, it's clear the Audi A3 e-tron delivers the unbridled power and performance to leave other hybrids in its wake. In other words, it's everything you'd expect from an Audi.

*Horsepower claim based on manufacturer published specifications. Class defined as the 2016 Audi A3 e-tron, 2015 BMW i3, 2015 Lexus CT, 2015 Chevrolet Volt, 2014 Honda Accord PHEV, 2015 Ford C-MAX, 2015 Nissan LEAF, 2015 Toyota Prius and the 2015 Mercedes-Benz B-Class ED. "Audi," "e-tron," "Truth in Engineering," all model names, and the four rings logo are registered trademarks of AUDI AG. ©2015 Audi of America, Inc.

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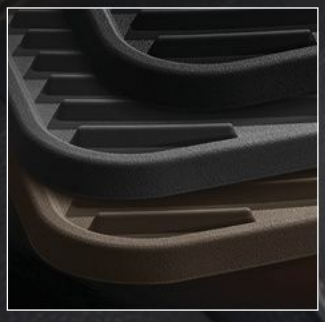

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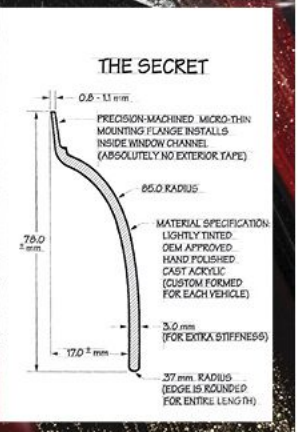

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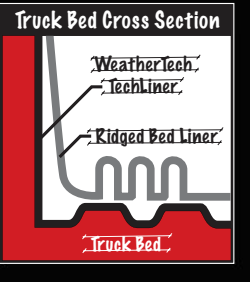

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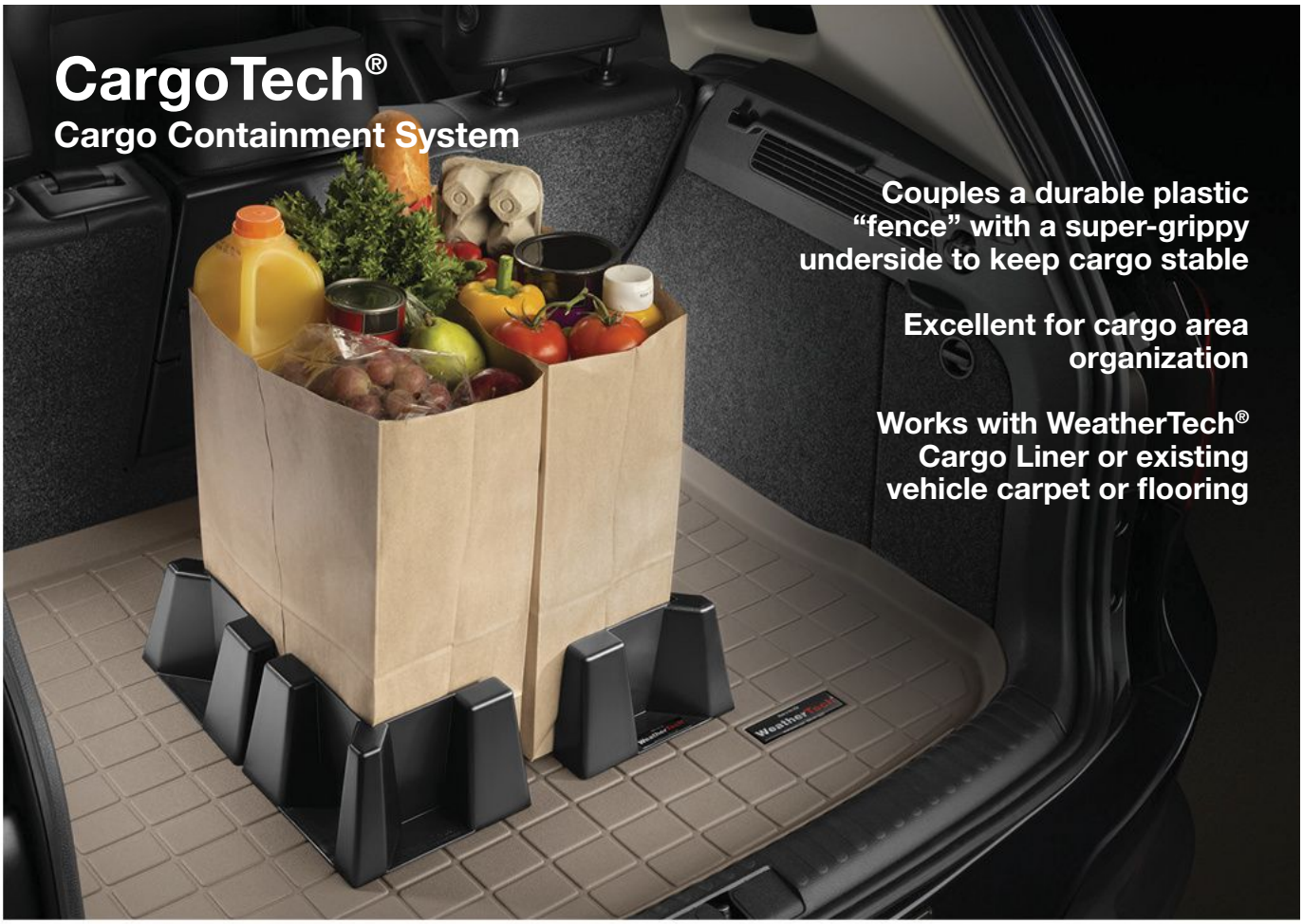

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THE PROFILE | MAURIZIO ARRIVABENE

THE HORSE WHISPERER

FERRARI'S NEW F1 TEAM CHIEF HAS ONE MISSION: RETURN THE SCUDERIA TO GLORY.

BY **BRAD SPURGEON** | PHOTOGRAPHY BY **DARREN HEATH**

STANDING IN THE FORMULA 1 PADDOCK by the red twin towers of his team's hospitality suites, wearing his red team uniform, his gray-white hair slicked back, a cigarette on his lips, Maurizio Arrivabene looks like a cross between the Marlboro Man and Enzo Ferrari.

It's as if he'd been chosen by a casting agent to be the new director of the Gestione Sportiva and team principal of Ferrari, historically F1's most successful and famous team. So far, the role seems to suit him perfectly, not simply because he looks the part but because he's producing results: Last year, Ferrari failed to win a single race for the first time since 1993 and finished on the podium only twice. By late July this year, more than halfway through the 19-race season, the team had won two races and scored podiums in six others.

So, who is this mysterious 58-year-old from Brescia?

His official biography is vague. Both Ferrari and Arrivabene's longtime employer, Philip Morris International, offer only the barest details of the nearly four decades he spent as a marketer for the tobacco giant, first in Italy, and then, beginning in 1997, in Lausanne, Switzerland. Most recently, he held the position of vice president of event marketing and motorsport. In this role, he spent nearly as much time with Ferrari as with Philip Morris, no surprise since he's been involved with the Marlboro sponsorship at Ferrari since the late 1980s, a close relationship instrumental in his appointment late last year at the Italian team.

If Ferrari's decline hasn't been easy for F1 fans to witness, it must have been excruciating for Arrivabene and Philip Morris, which was financing a sizable chunk of the team's effort. After winning every constructors' title from 1999 to 2004 and every drivers' title, with Michael Schumacher, from 2000 to 2004, Ferrari went into decline, winning only a single drivers' title (2007, with Kimi Räikkönen) and just two team titles, in 2007 and 2008.

After five consecutive years without a title, two team directors were fired, one at the beginning of the 2014 season and his replacement at the end. Ferrari's longtime president and chairman, Luca Cordero di Montezemolo, was also replaced last fall, by Sergio Marchionne, the Italo-Canadian head of Fiat Chrysler Automobiles, which owns most of Ferrari. A new era at Ferrari and the Scuderia clearly had arrived.

"We needed someone who has a deep knowledge not only of Ferrari, but also of the governance of the sport and of its requirements," Marchionne said when he appointed Arrivabene. "Maurizio has a unique ability in this, having been really close to the Scuderia for all these years. Ever so important is his management experience, which he achieved over the years in what is a complex and extremely tight-ruled market. This experience will help him run and motivate the team."

Philip Morris International CEO André Calantzopoulos also threw his weight behind the appointment, issuing a statement describing Arrivabene as "blessed with a creative genius that has led to some of our more important innovations across a wide spectrum of consumer engagement and other marketing

activities. Maurizio was also widely and deservedly praised for leading and mentoring countless employees across the company in an exemplary manner."

Arrivabene's creative sense is less admired by Bernie Ecclestone, the Formula 1 promoter, perhaps due to the Italian's publicity stunt during preseason testing in Spain last winter. Protesting Ecclestone's control of paddock passes for team personnel and guests, Arrivabene sat among the paying spectators in the grandstands. The move was popular with the media, as it added a human touch rarely seen in F1's increasingly colorless team principals. But afterward, when an interviewer asked Ecclestone on the official F1 website if he agreed that Arrivabene was "quite a character," he replied, "But only for himself and not for Formula 1."

Nevertheless, it was precisely for his experience working with Ecclestone and the other team principals that Marchionne hired Arrivabene. He also has been a member of the F1 Commission, a group of representatives from the series that shapes Formula 1's future, since 2010.

"As a member of the F1 Commission, he clearly sees the challenges which lie ahead of us," said Marchionne, who is also on the board of Philip Morris. "He has been a constant source of new ideas to shape up a new Formula 1."

The responsibility Marchionne has given Arrivabene cannot be overstated. Ferrari is a national treasure in Italy.

Sebastian Vettel (opposite) has been a podium presence all season. Arrivabene and "F1 Supremo" Bernie Ecclestone (below) have had a prickly relationship at times.

When the team wins on Sunday, Ferrari road cars fill the streets on Monday. The national media lambaste any failings, publishing even the smallest rumors and gossip, and celebrate the victories. Ferrari is the only team that has raced in every season since the F1 championship began in 1950. Without Ferrari, Formula 1 loses much of its luster; without Formula 1, Ferrari loses much of its mystique. Although Ferrari has two victories this year, at press time, the Mercedes team had claimed the rest. Arrivabene still has to prove that he is capable of leaping from the low-profile job of marketing cigarettes to successfully running a racing team with more than 700 members over the long term.

The soft-spoken Arrivabene seems keenly aware of this fact. In an interview during the Canadian Grand Prix weekend in June, he played up his long connection with and affection for Ferrari. With a sparkle in his eye and a ready giggle, he explained that his association with the team goes back to his first encounter with "the old man," Enzo Ferrari, not long before he died in 1988 at 90.

Arrivabene, who was still with Philip Morris in Italy at that time, was about to be assigned to work directly with the Ferrari team, but first his boss had to take him to Maranello to meet Enzo Ferrari for approval. As he waited outside Enzo's house on the grounds of the Fiorano test track, he was so fascinated with the Formula 1 car mechanics were pushing out of a garage that he paid no attention to movement in the window overhead—Ferrari looking out.

"Suddenly, my boss came out and said, you're fine," recalls Arrivabene. "And I said, okay, but he didn't meet me. And he said, here's the story: I went in, Mr. Ferrari turned his head.

"The guy is okay.

"And I said, but you didn't meet him.

"And Mr. Ferrari said, yeah, but I was looking at how he was looking at my car."

That passion for F1 cars came from Arrivabene's father, who would escape important Sunday family get-togethers to find a television to watch the grand prix. "It was always in our family DNA," Arrivabene said. "Even if the television was in black and white, I was looking at only one color: red."

Arrivabene readily admits that Ferrari was always his preferred client at Philip Morris, even when his responsibilities also included BMS Scuderia Italia, a Brescia-based team that raced in Formula 1 from 1988 to 1993. Through his associations with both teams, he became close to drivers—including Ivan Capelli, Andrea de Cesaris, Alex Caffi, Gerhard Berger, Eddie Irvine, and later, Michael Schumacher, Rubens Barrichello, and Felipe Massa—as well as team personnel, from mechanics to directors. He even met his future wife, Stefania Bocchi, at the track. She is still a Ferrari press officer today.

Ferrari is the only team that has raced in every season since the F1 championship began in 1950. Without Ferrari, Formula 1 loses much of its luster; without Formula 1, Ferrari loses much of its mystique.

These longtime relationships were important when he became the Ferrari team boss. Earlier this year, while dining at Montana, a Maranello restaurant popular with Ferrari executives and racing staff, Arrivabene learned just how important.

"One evening, the owner, Mamma Rossella, she looked at me very seriously, and she said: 'You know, most of the guys, when they come here to eat before returning to the racing department, they told me that 50 percent of them were ready to resign, or to ask to go to the production side. But when they heard your name, everybody said, no, no, Maurizio is coming, we will stay.'"

When he arrived at the factory last December, he found a team mired in a morose and defeatist atmosphere. As in its previous down period, in the 1980s and 1990s, when it went two decades without a drivers' title, Ferrari had become a nest of internal bickering and backstabbing, with everyone looking to protect their own turf.

"Guys, what's going on here?" Arrivabene recalls asking. "The first thing I want to tell you—and I'm not pointing the finger at anyone—is that if we are going to win, we are going to win together. If we are going to lose, we are going to lose together. And I told them, the first person responsible for an eventual disaster is me, and the first one responsible for a victory is you.

"I also told them that I didn't want to hear any more that 'It's the fault of the engine,' or 'It's the fault of the chassis,' or 'It's the fault of the aero.' If we fail, we fail together. And suddenly, I realized that the flame was taking life again. And now it's here. We are all going in the same direction."

Results came quickly, with a win in March at the Malaysian Grand Prix, the second race of the season, by four-time world champion Sebastian Vettel, previously with the Red Bull team. Arrivabene told me then that the victory, paradoxically, was practically too soon, lifting expectations too high. He was right. There would be no more victories for months, although the team had regular podiums and a solid hold on second place in the championship.

A victorious Vettel is swarmed by the Ferrari team after winning the Grand Prix of Hungary.

The key to the transformation and continued development was making sure the team worked as one and did not fall apart into factions as in the past. That, he said, would come through strong leadership.

"To be a leader, you have to feel it, you have to be recognized by the people you are working with," he said. "If you turn your head and you look back and you find that all the people are following you closely, not doing things behind your back, but being with you, then they are recognizing your leadership."

A second victory finally came at the end of July, at the Hungarian Grand Prix, when both Vettel and teammate Räikkönen (who returned to the Scuderia in 2014 after several years away) leaped past the Mercedes drivers at the start of the race, with Vettel holding the lead until the checkered flag. Räikkönen might have been able to take second place, but his car eventually broke down and did not finish the race.

It was a profoundly important victory for Ferrari but one with an asterisk: The Hungaroring circuit doesn't require as much engine power as most F1 tracks, and engine power is precisely what Ferrari has been lacking since the advent last year of downsized, hybrid engines. Hungary, therefore, was not a conclusive indication that Ferrari now has what it takes to beat Mercedes regularly.

No one knows this better than Arrivabene.

"We have a process in place, and compared with last year, we are gaining a lot on the engine side," Arrivabene said. "For Ferrari, the engine is very, very important. So we have our plan—without rushing—to continue improving the engine, and step by step to adapt all of the aero, according to the engine."

"You have to make sure you are creating efficiency," he added. "Because when you have too many tools, sometimes it is easy—especially for engineers, because they like experimentation—to go off of the stage."

In fact, much of this year's success is thanks to James Allison, the team's technical director since the end of 2013. He and his technical team had already begun designing the new car before Arrivabene arrived, making several key changes in the layout of the oil tank, gearbox, and exhaust that have made better use of the new rules than last year's car did. Allison and his team also figured out how to reduce premature wear on the Pirelli tires, which had defeated them in the past.

When I asked Arrivabene how he expected to run a racing team without any engineering experience of his own, he scoffed, telling me that in his more than 25 years in the series, he had seen many team principals who were trying to look like engineers and were not.

"Or they sometimes talked like engineers without knowing what they were talking about," he said. "I think in Formula 1, a team principal needs first of all to be a manager."

The last great manager of the Ferrari team was Jean Todt, a Frenchman, who held the job during the period of the Scuderia's greatest success, with Schumacher and a largely non-Italian staff of directors. That, of course, is another particularity of the Arrivabene reign—he's the third consecutive Italian team principal since Todt, after Stefano Domenicali (2008 to 2014) and Marco Mattiacci (2014). One wonders if it's a disadvantage to be Italian in this highly stressful, highly visible job in Italy, but Arrivabene counters that his years working outside Italy have given him a different perspective.

"The advantage is that you bring a mentality that is a bit more open, a bit broader," Arrivabene said. "Being Italian, you really understand the conversations happening at all levels on the team. Being Italian, or being an Italian with experience from another company outside of Italy," he added, "you can provide the passion that you need when working for Ferrari but at the same time the pragmatism, the working experience, that you've gained from your full professional life."

As for a title?

"I know how to get there, but I don't know when we will get there." ■

DAN ISTITENE/GETTY IMAGES

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[1]Available engine. [2]Estimated towing capacity on select trims based on Nissan internal testing. [3]The 2016 Nissan TITAN is not yet available for purchase. Expected availability in December 2015. Pre-production model shown; see actual production vehicle when available for final details on features. See *Nissan Towing Guide* and Owner's Manual for proper use. Cargo and load capacity limited by weight and distribution. Always secure all cargo. Heavy loading of the vehicle with cargo, especially on the roof, will affect the handling and stability of the vehicle. Always wear your seat belt, and please don't drink and drive. ©2015 Nissan North America, Inc.

MOTOWN MILE | STADIUM SUPER TRUCKS

THE JOY OF FLIGHT

ROBBY GORDON'S STADIUM SUPER TRUCKS HAVE BROUGHT THE CRAZY BACK TO ROAD RACING.

BY **LARRY WEBSTER** | PHOTOGRAPHY BY **ALEX WONG**

MIDAIR, SOME FIVE FEET CLEAR OF the pavement, the one-and-a-half-ton truck leaves its trajectory and starts a lazy, counterclockwise spin. The right front tire, a massive knobby tethered by a shock the size of a sprinter's leg, reaches for the ground, taking the truck's corner with it. Now catawampus, this machine that appears as fit to fly as an elephant heads back to earth.

If Robby Gordon, the racing driver and showman behind Stadium Super Trucks, is to be believed, everything will be okay. But what started as an unnerving flight has morphed into something far more sinister.

THE MOST EXCITING ROAD RACING HAPPENING TODAY BEGAN as a lark. During the 2013 inaugural season for his Stadium Super Trucks (SST) off-road racing series, Gordon brought his trucks to IndyCar's Long Beach Grand Prix. It's run on a flat, asphalt street course, nothing like the motocross-style circuits Gordon intended to feature. But he needed publicity to promote the fledgling series, and Long Beach attracts 175,000 spectators and, more important, TV cameras.

He built a bunch of aluminum ramps, sprinkled them on the course, and set racers loose, himself included. The result was a prelude to the madness to come: trucks flying, tilting in the turns, banging together in a competition one pundit likened to "professional wrestling on four wheels." The crowd, used to sleepy support races before the main IndyCar event, "went completely insane," recalled *R&T* contributor Marshall Pruett, who was there. Promoters called. Gordon added more asphalt races, which sometimes ended with trucks barrel rolling across the finish line. This past season, 14 of the SST events were run on pavement, including during the Detroit Grand Prix weekend. A couple days before the race, Gordon brought a truck and two ramps to our Detroit-based Motown Mile test track.

The first thing you notice about the custom-built truck is its size. Tiny, only a bit longer and wider than a Miata, it has 26 inches of suspension travel, so it's more than a foot taller than the Mazda. When I met up with Gordon at the Mile, he was underneath the truck, tightening a piece of Jabroc skid-plate material that was added when the trucks started running on pavement.

Gordon designed and built the trucks for dirt. He says the idea went from a concept in his head to a running prototype in seven insanely intense days. That's classic Gordon. Pugnacious, in perpetual motion, with a taste for chaos. (In addition to racing, he started the Speed energy-drink company. As if he needed more.) His racing career is both famous and infamous. No one doubts his skill as a wheelman: He's won seven Baja races, two IndyCar events, and more than enough sports-car races to establish him as one of the most versatile drivers since Dan Gurney. He's also won at NASCAR, but that was a challenge. Over nearly two decades in stock cars, he ping-ponged between various teams. At times, he impressed with flashes of speed. Just as often, he ruffled the paddock with his unfiltered mouth. After a wreck with good ol' boy Michael Waltrip, Gordon called him "a piece of sh**."

Gordon (top) brought his custom trucks to our airport track. Flying (right) requires mechanical and mental fortitude.

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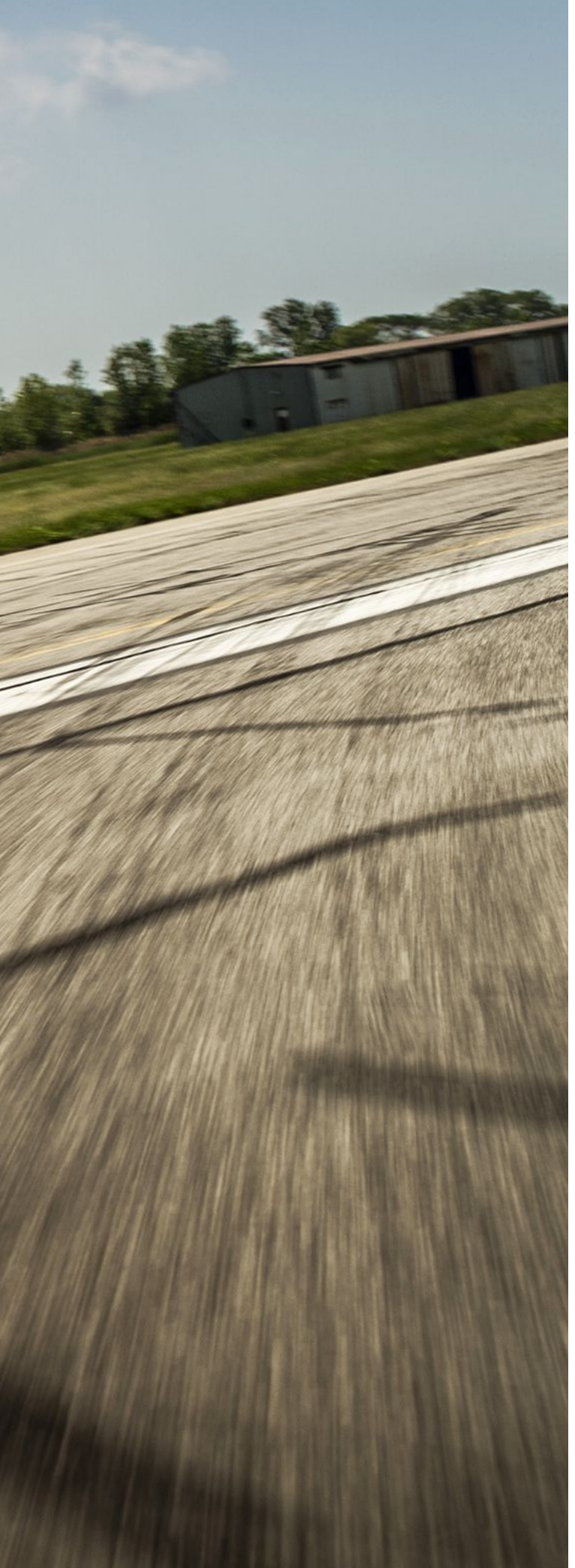


Gordon ran his own stock-car team in North Carolina until 2012, his final season in NASCAR. He was the last single-car owner/driver in the series. After that adventure ended, he focused on the stadium trucks. He's built 21 and owns them all. Racers rent them for $25,000 an event or $225,000 a season. That includes transport, tires, fuel, and even crash damage. In a world where a season driving Porsches in the Tudor United SportsCar Championship series tops a million (and even a one-weekend ride in a semiprofessional road race is 20 grand), Stadium Super Trucks are a bargain.

The rigs use a steel-tube frame, 600-hp Chevy V-8, solid rear axle, and three-speed automatic transmission. They weigh 2900 pounds, which is distributed evenly front to rear for level flight.

I was resigned to the fact that I was, at some point, probably going to be on the roof.

In the passenger side of the cab, there's a five-gallon jug that catches every possible fluid (except bodily) if something fails. A maze of steel tubes protects the driver if the thing rolls, which is not only possible, but likely given the truck's high center of gravity and soft, long-travel suspension. NASCAR champ Rusty Wallace rolled one while practicing for the X Games. "Robby didn't design the things to be easy to drive," he told me. "You don't get that ass end out early enough, and that engine torque just turns the damn thing right over."

Crashing was definitely on my mind as I slithered inside the cab at the track. "It won't roll if you just drive it like a regular car," Gordon reassured me. He'd just positioned the ramps on the Mile and tested them by hurtling some 100 feet through the air. Then he drove the entire course on two wheels. He finished by pulling into the makeshift pits fully sideways, arresting the slide mere inches from me. "Bring on Ken Block," he said.

Strapped in, cruising down the main straight at maybe 80 mph, I gingerly turned the steering wheel to follow the Mile's high-speed right-hand kink. The truck heeled over like a 1970 Cadillac Eldorado. My left hand instinctively reached out to catch my fall and stiff-armed the roll cage. I hit the brakes. The truck nosedived as if taking cover. Better, I thought, to take it easy. There was little feeling through the controls, a disconcerting numbness. If someone had told me the track was covered with cotton balls, I would have believed them. The body rolypolied around. The suspension might as well have been stretched rubber bands. Although Gordon said it wouldn't flip if I drove it normally, damned if it didn't feel exactly the opposite.

After a couple laps, I pulled in to let the photographers have some time. John Story, Gordon's business manager, was waiting in the pits. I expressed my continuing fear about rolling. "Robby's not going to tell you how to wreck his truck," he replied.

It was my turn behind the wheel again. "Don't be tentative," Gordon said. "You have to manhandle these things. As soon as you get that initial turn-in, just nail the gas. You have to drive these things sideways."

"Didn't Rusty Wallace roll one of these?" I asked.

Gordon looked at the ground, smiled, and said, "Yeah, he did. But so what? You've got yards of steel pipe surrounding you. You're not going to get hurt."

I was still rising, tied to a contraption over which I had no control. There was plenty of time to ponder the looming disaster.

I went back on track, resigned to the fact that I was, at some point, probably going to be on the roof. And it wasn't a big deal. *You have to manhandle these things. As soon as you get that initial turn-in, just nail the gas. You have to drive these things sideways.* Given a Corvette, I could do that all day, but the truck was a ship in storm, a dimension of driving that was totally foreign. Imagine trying to balance a dish on a stick. While riding a bull.

In the right-handers, I could have sworn my left shoulder was going to scrape the pavement. Turn left, however, and I was hefted upward. The left front tire did the same, and as I straightened out, that once-skyward wheel would land with a thud. Throughout, the V-8 howled like a stock-car engine, the tires constantly in some type of slide. Gordon says the off-the-shelf Toyos, which somehow survive the abuse of SST duty, get grippier the more they wear.

Stadium Super Truck

PRICE $300,000
POWERTRAIN
6.0-LITER V-8,
600 HP, 600 LB-FT; RWD,
3-SPEED AUTOMATIC
WEIGHT 2900 LB
TOP SPEED 140 MPH

The truck's body movements seemed to magnify mistakes. Any hesitation with throttle midslide unleashed the energy stored in the compressed springs, pitching the thing the other way around, sometimes violently. When driven as if you want to destroy it, an SST is a bizarre but wholly entertaining experience. There's no mystery to the spectacle these trucks provide; they're disorienting and always eager to bite.

And then there are the ramps. Made of aluminum, they're 10 feet wide, 17.5 feet long, and three feet high. They look like something Evel Knieval might have used to clear the fountain at Caesars Palace. In the middle, there were huge gouges in the aluminum plate, created when a truck bottomed out. In series events, they're typically positioned soon after the exit of a turn, so the trucks hit them at roughly 80 mph. Gordon had two ramps on the Motown Mile track, which I bypassed while trying to get acclimated to the truck. With a dozen or so laps under my belt, I felt as comfortable as I was going to. Which, to be honest, wasn't very comfortable at all. But since flying is the truck's signature move, eventually, I had to confront those ramps.

Gordon said the SSTs more or less bounce off the middle and are usually already airborne before they reach the end of the ramp. From inside the cab a few hundred yards away, the ramp looked upright, like a low wall. I sat in the gruffly idling truck for a few moments, mustering my nerve, and then accelerated.

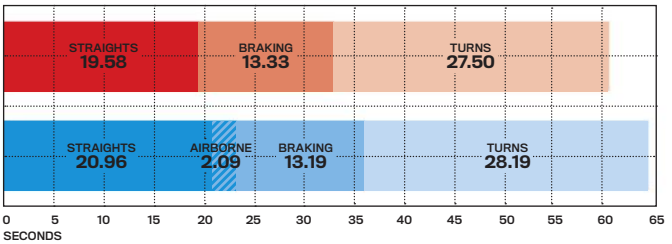
And then I swerved around it.

With Gordon and a handful of others watching trackside, that was downright humiliating, but I also aborted my second attempt. Deep pause. I could either continue to agonize, or

TAKING OFF AT THE MOTOWN MILE

We've run 45 vehicles on our private airport test track, but none as nutty as the Stadium Super Truck (SST). Custom-made with a steel-tube frame, 600-hp V-8, and three-speed automatic, the SST weighs only 2900 pounds, besting the power-to-weight ratio of the Mile's all-time leader, the Ferrari 458 Speciale. But the SST is built for spectator entertainment, not speed. The long-travel suspension perches the truck high in the air, creating a ludicrously high center of gravity. The result is madness.

LAP-TIME BREAKDOWN — NO JUMPS VS. JUMPS



60.41 SEC **64.43 SEC**

Running a lap while hitting the jumps costs more than four seconds—mostly due to slower corner speeds approaching the ramps and the inability of the SST to continue accelerating down the straightaway while it's in the air.

115.2 MPH

Hitting the Kink meant hitting the brakes, which cost some 20 mph compared with a Corvette—which was still on the throttle. Even this slight turn of the wheel made the truck list dramatically.

Exiting a left turn, the V-8's prodigious torque twists the chassis with such force that the left front wheel rises off the pavement.

Dip a wheel off the apexes in this section in a car, and you're done. The SST, though, is unfazed by the rough shoulder, whizzing through in 7.8 seconds, about the same as a 197-hp Ford Fiesta ST.

Another stab of the gas or pull of the handbrake kicks the back end out for a long, glorious slide through the tightest corner.

.94 G

PEAK LATERAL ACCELERATION

A whole bucketful of brake dive and then a sharp turn of the wheel starts this corner. A quick stab of the gas or yank of the handbrake follows to spit the rear end sideways. Drive the SST like a normal car, and it just plows.

381 FEET

In laps where the SST bypassed the ramps, the truck gained a nearly 400-foot lead at the finish over the laps where it hit the jumps.

THE JUMPS

The best technique is to level the speed a few car-lengths before and then goose the gas as the truck ascends the ramp. Flight rise and length depend on takeoff velocity. The trucks can soar as high as 20 feet and as far as 160 feet.

MOTOWN MILE RANKING

1 Ferrari 458 Speciale **51.92 sec**

2 Nissan GT-R Nismo **51.93 sec**

43 Volkswagen Golf GTI **60.35 sec**

44 Stadium Super Truck **60.41 sec**

45 Ford Fiesta ST **62.80 sec**

I could get it over with. With every shred of manhood I still possessed, I buzzed to the other ramp, held the truck in second gear, and goosed it just as the front tires hit the metal. Wallace's words echoed through my head: "If you don't power up the ramp at the right time, you can get the thing chicken-ass end up in the air and endo that baby." "Endo," as in "end-over-end."

The initial thump of impact sent my head forward. Then I bounced into space. I floated, weightless, toward blue sky. If you've ever launched a car, say over a rise in the road, as I have countless times, you're trained to expect an immediate landing. But at about the time I'd anticipated hitting tarmac, I was still rising, tied to a contraption over which I had no control. There was plenty of time to ponder the looming disaster, to curse myself for going too fast, to imagine the impact and pain that were sure to come. This was pure fear, the "I'm dead I'm dead I'm dead I'm dead" loop playing at full volume.

All four tires struck the ground simultaneously. My breath left in an audible gasp. The truck rolled on, unaffected. Relief washed over me, the kind that only arrives when luck and circumstance and some unknown cosmic force save the day. Or save your ass. I might have fist-pumped, shouted a few *woo-hoo*s. I'd survived.

I was fine. And elated. So elated, I went to the other ramp and flew again. And again. Addicted.

To Robby Gordon, flying through the air in one of his Stadium Super Trucks probably feels like taking a turn does to the rest of us. For me, this experience, the glee at landing, was the most joyous I'd felt in a car since I passed my driver's test. I don't know how many times I bounced off the ramps. Every time, the "I'm dead" loop replayed, and every landing brought sweet relief.

I learned that with practice, it's possible to alter the in-flight pitch by either hitting or letting off the gas right before takeoff. Landing on just the front wheels or rear wheels first is far softer. The all-four-wheels landings hurt. My back was sore for days.

Finally, the photographer waved me in. The track was closing, but I had time for one last leap. Gordon said I could hit the jumps "way harder," so with newfound bravery, I approached the next ramp faster than I'd ever previously gone.

I'm not sure what I did differently, but this time, the truck started to turn midair. I'd gotten cocky, I thought, and would now pay. The right front corner dived. I was sure the front bumper was going to hit, instead of the tires. I'd auger in.

But no. The right front tire touched down first, then the right rear, and the truck lurched back straight. I hit the other ramp before the track marshal blocked my path.

That weekend, I went to the Detroit Grand Prix. The most common question asked among the crowd was, "Did you see those nutball trucks?"

Yes. Yes, I did. ■

FASTER, FASTER FOR THE HELL OF IT

HONDA LEFT ITS ENTHUSIASTS TO ROT. NOW THE COMPANY WANTS THEM BACK, AND IT'S BRINGING 306 HP AS BAIT.

I CAN'T PLAY THE IMPARTIAL JOURNALIST HERE. There is no statement of full disclosure that can wash the years of Civic obsession from my hide, no feigned detachment that can neutralize the days I spent laboring for hoarded pennies, blistering my hands, skipping meals and haircuts and drinks with pretty ladies for brakes and cylinder heads and a gauge cluster with an honest-to-God *tachometer*. It cannot be done.

Which is why I felt a hitch in my chest when Honda CEO Takahiro Hachigo made it clear he wants to get back to building cars with a pulse.

Be still my teenage heart.

This Euro-spec bruiser is the last of the forbidden fruit. It's aimed at splitting cars like the Golf R and Focus RS wide open. It's also the first time Honda has let the company's new turbocharged 2.0-liter four-cylinder out in the wild—the same engine that will eventually show up in the U.S.-spec Type R. It's a terror, ripping to 7000 rpm and good for 306 hp, but it doesn't feel like the engines I fell in love with. The kick in the pants of the secondary cam profile is gone, replaced by generic, blinding acceleration. Playing with the onboard acceleration timer, I saw 0–62-mph numbers in the low fives. Officially, Honda says the hatch will do it in 5.7 seconds.

And that from front-wheel drive. VW and Ford may shove power to all four corners in their megahatches, but Honda does not. Instead, the Type R's onslaught of engineering and electronic wizardry keeps the car pointed in the right direction. There's surprisingly little torque steer for a machine that drops V-8 power on heroic front tires.

Big vents, bigger wings, and exaggerated aero bits let local law enforcement know you can afford a citation or two, while the cabin serves up all the goodies my younger self would have murdered for: seats with beefy bolsters, plenty of red trim, and a chunky aluminum shift knob.

There's also a tempting "+R" button on the dash. Mash it and the car's electronic hive mind stiffens dampers by some 30 percent, reduces power steering assistance, and turns the throttle mapping vicious. It's insufferable on the street, happy enough on the Automotodróm Slovakia Ring. Traction control loosens up, letting the Type R slip a bit before chomping down on the fun. The car understeers in the tight sections but has a shocking amount of grip in the big, fast sweepers.

Make no mistake, this is as sinister as the Civic gets. It can blister the Nürburgring Nordschleife in 7:50.63. It has a very believable top speed of 168 mph. The four-piston Brembo calipers and 13.8-inch front discs stand up to hilarious levels of abuse, but this isn't the Honda I fell for as a younger goon. It's less about the joy of driving and more about bloodlust for whatever's fool enough to go fender to fender. —ZACH BOWMAN

Honda Civic Type R (European spec)

PRICE (U.K.) $46,882
POWERTRAIN 2.0-LITER TURBOCHARGED I-4, 306 HP, 295 LB-FT; FWD, 6-SPEED MANUAL
WEIGHT 3050 LB
0–62 MPH 5.7 SEC
TOP SPEED 168 MPH
ON SALE NOW

JÜRGEN SKARWAN

THE FIRST DRIVE | 2016 CADILLAC CTS-V

FAT FROM FIRE

CADILLAC—*CADILLAC!*—PULLS A 200-MPH SEDAN OUT OF ITS HAT.

"NO ONE ASKED FOR THIS CAR," the Cadillac guys kept saying when showing off their latest sport sedan, and it's a claim they've made before. It goes back a dozen years, actually, to the first CTS-V, a true skunkworks project with a 400-hp Z06 motor, a beefier drivetrain, and a competent but cobbled-together chassis. That car worked plenty well, despite a NASCAResque feel and different brands of shocks fore and aft. Not bad, as far as something no one asked for.

But come on, Cadillac. No one asks restaurants to offer thick steaks or bars to offer dry martinis or torch singers to sing "You Don't Know Me." Yet somehow, there they are.

And so here we have an LT4 V-8–motivated Cadillac sport sedan, this time with the same brand of magnetorheological shocks at all four corners and Brembos (six-piston front, four rear) so big, the discs take up almost all available room in the 19-inch wheels. Lift-reducing aero garnishes help it remain grounded at the 200-mph top speed. Add to that optional Recaros, an eight-speed automatic feeding a nifty electronic diff, and a Track mode with five levels of traction management ranging from full on to all off, and it's almost like they want you to take this beast to the track.

Which they did, debuting it at Road America, a rather bold move in and of itself. Anything with less than, say, 400 hp gets

kind of lost on those four legendary miles. The CTS-V knew where it was at all times. The supercharged 6.2-liter may be down 10 hp from the Corvette Z06 and hauling two tons, but it's still just 67 horses away from the Charger Hellcat and moves only 6.5 pounds with every horsepower, versus about eight pounds for the BMW M5 and Mercedes E63 AMG.

That means it touches 60 in 3.5 seconds and does a quarter-mile in 11.6 at 126.1 mph. But can it dance?

Road America's famous Kink was blocked off for our safety, but that put us through the chicane and let us get the measure of the Cadillac in quick transitions, always a big car's weakness. It did fine, though it was more at home on the course's trademark high-speed sweepers. On the deceptive downhill 96-degree left at Turn 8, which fools everyone into braking too late and suddenly, making turn-in too quick and ragged, the CTS-V's sheer grip and solid chassis pulled fat from fire every time, almost without being asked. This is one playful bruiser.

Cadillac CTS-V

PRICE $85,990
POWERTRAIN 6.2-LITER SUPERCHARGED V-8, 640 HP, 630 LB-FT; RWD, 8-SPEED AUTOMATIC
WEIGHT 4128 LB
ON SALE NOW

And since a healthy chunk of the sedan's weight is extra cooling, the heavyweight took big bites of the track without any hiccups. We missed having a manual-gearbox option, but less than you might think; this is a good transmission, and it's in a linebacker of a luxury sedan. We'll miss the wagon option more, but those just didn't move.

This car does. It's an ingot of speed, with sumptuous road manners on the Milwaukee-to-Elkhart Lake drone, where there was time to appreciate the wireless charging and the lush expanses of sueded microfiber. The damned CUE infotainment system is still with us, although Apple CarPlay/Android Auto compatibility is here to help. And the CTS-V devours the highway politely enough.

So yes, it's a thick steak and a dry martini and it sings just about any number you want. Our needs are simple, but nevertheless, we thank Cadillac for anticipating them.

—JOHN KREWSON

RICHARD PRINCE

R&T OFFICIAL TEST RESULTS

0–60 MPH	ROLLING START, 5–60 MPH	STANDING ¼-MILE	TOP SPEED	BRAKING, 60–0 MPH	SKIDPAD, 300-FOOT
3.5 sec	3.9 sec	11.6 sec @ 126.1 mph	200 mph*	112 feet	0.98 g

*mfr claim

BANSHEE CHORUS

LESS PURPOSE. LESS ROOF. MORE NOISE.

YOU LOOK AT THE PROJECT 7, hear it, get your consciousness rattled by it, and think it is . . . a track-day special? A hard-ass? Instead, it's heaven. Remarkably, it's also a bargain, despite its rarity. Jaguar knocked together 250 of them, and they're all spoken for. Underneath, Project 7 is an F-type R roadster. But note the speed hump, an obvious homage to Jaguar's D-type. Note the splitter up front. Note the rear wing. Note the gaping grille mouth. All hallmarks of something fearsome.

"Every part we removed was replaced with something lighter," says Paul Newsome, director of Jaguar Land Rover Special Vehicle Operations. At SVO's Oxford Road shop, all the parts exclusive to the Project 7 are fitted by hand. Pitching the roof mechanism for a cloth bikini and replacing the roadster's retractable spoiler with a fixed rear wing help save 99 pounds over the F-type convertible.

Fiddling with the same ballsy V-8 that motivates the F-type R results in a 25-hp increase. Accompanying the maniac exhaust note are the banshee sopranos of supercharger yowl and induction gasp. In chorus, they are glorious and unbelievably loud. Squint and turn your cheek, because you're not taking your foot out of the gas. No way. If you do, the crackles and pops of thrust unfulfilled are damningly loud as well.

My love for Spanish back roads is only enhanced behind the wheel of Project 7. Those rough patches? This Jag's adjustable dampers default to a mode that is softer than the standard F-type's. Which is good, because under the front fenders, Project 7 is running 1.5 degrees negative camber, a degree more than the F-type, thanks to new suspension knuckles. New mounts and anti-roll bars complement a 58 percent stiffer spring rate up front. That much camber and very sticky Continental tires aren't ideal for daily commuter duty but do suit casual track days. God help those 250 Project 7 owners: Their tire budgets will never be the same.

Jaguar F-type Project 7

PRICE $165,995
POWERTRAIN 5.0-LITER SUPERCHARGED V-8, 575 HP, 516 LB-FT; RWD, 8-SPEED AUTOMATIC
WEIGHT 3550 LB
ON SALE NOW

At Circuito de Navarra, near Pamplona, I mat the throttle, aim for the turn-in point at the end of the straight, and hold it open. I manually click up the gearbox, let the car stretch its legs. This is why I like revvy, blown V-8s. The roar, shift in weight, and subtle tug at the wheel when traction returns. You can count on big carbon-ceramic brakes to haul you down from speed. Anyone, even a hack like me, can feel like a hero. Compared with the F-type roadster, it's just a little better, a little sharper. Project 7 is not a license eraser, it's a GT car. A very good one.

Tick every box on the F-type R roadster option sheet and you'll be past $125,000. At $165,995, the Project 7 treatment adds a $40,000 premium for something glorious, showy, handsome, and special. Rare as it is memorable. The U.S. will get 50. There will be a smattering of colors, none of which matter more than British Racing green.

—CHRIS CANTLE

NICK DIMBLEBY

What owners say about V1...

★★★★★ *Bill P., Phoenix, AZ*

Where's the radar? An arrow lights up, pointing either Ahead, to the side, or Behind. And, amazingly, it's never wrong.

★★★★★ *Arnie R., Atlanta, GA*

So easy to operate, a box with one knob. No need to poke around at full-arm's reach for little buttons the size of rice grains.

★★★★★ *Glenna R., Dallas, TX*

Love the arrows! Where's the radar? They tell me every time. How come no other detector thought of that?

★★★★★ *Chas S., Charlotte, NC*

Situation Awareness you can trust. With the Radar Locator arrowing toward threats, and the Bogey Counter telling how many threats you face, V1 makes defense easy.

★★★★★ *Cal L., Trenton, NJ*

I've owned my V1 since 2001, and I've had it upgraded twice. I trust the arrows to point out every radar trap. When I know *where*, I know how to defend.

★★★★★ *Ed H., Las Vegas, NV*

How can anyone not be smitten by the Arrows? Radar ahead needs a different defense than radar behind. When I know where, I know what to do. And I can tell when I'm past the threat, too. All other detectors just *beep* and keep you guessing.

★★★★★ *Rob R., Sacramento, CA*

This is the slam dunk best radar detector. No databases to keep updating, or other "features" I'll never use. Instead V1 tells me the important stuff—the Bogey Counter tells you how many threats within range and the red arrows tell where they are.

Trust...V1 earns it one ambush at a time.

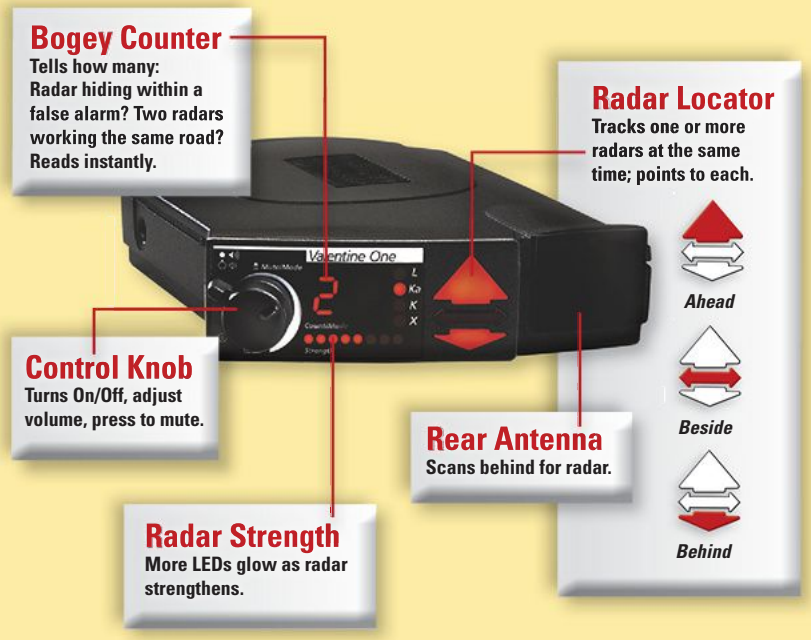
★★★★★ *Harold B., Houston, TX*

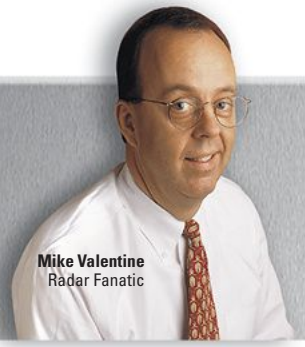
On my way home this afternoon I was following another detector user. I could see red blinking in his windshield as we went past the first radar. Thinking the danger was behind, Mr. Ordinary Detector User hit the gas.

Uh-Oh. **V1's Radar Locator was showing two arrows, one pointing toward the trap now behind, and a second arrow ahead. The "2" on the Bogey Counter confirmed we were being double teamed.**

Sure enough, Mr. O. D. User cruised into the second trap up the hill at 15 over and got himself a blue-light special.

V1 points to *every* trap. I trust it completely.





Mike Valentine
Radar Fanatic

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THE FIRST DRIVE | 2016 PORSCHE BOXSTER SPYDER

JUST SHY OF SPECIAL

PORSCHE'S NEW BANTAMWEIGHT ROADSTER IS A GREAT ONE. BUT IS IT THE *RIGHT* ONE?

OKAY, MAYBE THAT'S A BIT TOO HARSH. The Spyder *is* special, if nothing else by rite. It's both the most powerful Boxster ever and lightest Porsche convertible on sale, rocking a heritage nameplate to boot. You can either spec a six-speed manual gearbox or take your 80 grand elsewhere. The Spyder ticks every objective box, and most subjective ones, too. Aiming a car like this into the sunset, top-down and tail out, should split your face, court your wallet, and heal your soul. How can something so fundamentally good, so inherently right, come up just a bit short?

Some context: During the Fifties and Sixties, Porsche built a series of wonderful mid-engine competition cars, most notably the Type 550 and 718. Open-roof variants, called Spyders, dominated at Sebring, the Targa Florio, and European hill climbs. They embodied the giant-slaying archetype, twice as light with half the engine. They were also essential in establishing Zuffenhausen as a postwar racing powerhouse.

Essential. That's the Spyder credo. The last Boxster Spyder arrived in 2010, an enthusiast's special stripped down to basics. Even its motorized top was excised for a convoluted fabric canopy. The Dow Jones constituency kvetched. Those of us in the know were smitten.

Porsche Boxster Spyder

PRICE $83,095
POWERTRAIN 3.8-LITER H-6, 375 HP, 310 LB-FT; RWD, 6-SPEED MANUAL
WEIGHT 2900 LB
0–60 MPH 4.3 SEC
TOP SPEED 180 MPH
ON SALE NOW

Ostensibly, the new Boxster Spyder follows suit. Its roof is still manually operated, albeit using a friendlier (read: heavier) electronic assist. Electronically adjustable shocks get scrapped for weight savings. So do the interior door handles, replaced by nylon pull straps. Additions? A smaller steering wheel, short-shift lever, stiffer springs and dampers, fascias from the Cayman GT4, seats from the 918 Spyder, quicker steering from the 911 Turbo, and brakes from the Carrera S. Carbon-ceramics are optional. You do not need them.

The Spyder is compliant and balanced and moves beautifully. Chatty steering, surgical turn-in, docile oversteer. It's all fluid, the sort of thing you can manhandle with fingertips, hugely forgiving without feeling too sanitized. Good. But whereas the previous Boxster Spyder shed 176 pounds and gained 10 hp, this one flips the script. This time, curb weight drops a claimed 66 pounds, while output climbs 45 hp. The ideological shift is apparent behind the wheel.

The new Spyder engine, a bottlenecked 3.8-liter from the Carrera S, dominates the driving experience. The traction control, the suspension tuning, the tire setup—it all feels oriented toward putting power down, not managing speed bend-to-bend. And that mega-short-stroke lump needs revs, 4750 of them, to get all 310 lb-ft torque pumping.

This does not complement the Boxster's megatall gear ratios. First runs to 48 mph, second to 87. In a car largely predicated on its manual transmission, you don't use the third pedal often. So the big sell here is a big engine. The extra horsepower does not feel essential.

Ultimately, you're left with something defined by what's added instead of what's removed. Hot-rodding is easy, and a pumped-up Boxster is great. But one that's had each needless pound, every malignant ounce, carefully extracted? That'd be an archetype for the ages.

—MAX PRINCE

THE FIRST DRIVE | 2016 MCLAREN 675LT

QUANTUM LEAP

MCLAREN SAYS THIS 666-HP SUPERCAR IS ITS MOST RAW YET.

AMANDA MCLAREN DOESN'T REMEMBER her father. Not really. She was four years old when he was killed testing a Can-Am car at Goodwood Circuit in 1970. But she remembers a moment of understanding, at the British Grand Prix, when race stewards tried to disqualify James Hunt. The crowd lost it. Amanda looked at Hunt's car, the one named after her father, and felt tens of thousands of feet pounding on the grandstand. She thought the bleachers were going to collapse.

That was in 1976. Last November, after being removed from the company her entire adult life, Amanda took up as a docent in Woking. She's got this beam, the energy of someone who's finally found missing kin. Meeting her before I drive the new 675LT, the most driver-focused McLaren supercar yet, is wonderful and a bit spooky. Because she's got the nose, too, the chin, that same slightly bowlegged stride I recognize from grainy footage of Bruce McLaren ambling down pit lane. I point to her name badge, at the photo of a little black-and-white face peering out from behind a steering wheel.

"That's me, four years old, sitting in the first road-car prototype," she says, smiling. "My father was working on it when he died. The road-car project was very important to him."

Her words are still rolling around in my head when I meet the 675LT at Silverstone. You can tell this car was important to the people who built it, too: The LT is a quantum leap past the 650S on which it's based. Maybe some folks expected a rims-and-stickers special edition. This ain't that.

Despite the 675's suffix (read: Longtail), it grows most in front. The nose splitter is 80 percent larger, while the rear airbrake is upsized 50 percent. Both are lighter than 650S equivalents, a common theme here. Total weight savings amounts to 220 pounds. The LT has a thinner windshield and rear bulkhead glass (minus 7.7 pounds), a polycarbonate engine

PATRICK GOSLING

cover (minus 2.6 pounds), and a titanium exhaust (minus 2.4 pounds). There's carbon fiber everywhere. Bumpers, side skirts, rear decklid—hell, from the B-pillars back, the entire body is made from the stuff. And it's all finished in satin, rather than gloss, which saves 1.8 ounces. One engineer told me he'd gone at the wiring harness and removed six pounds of "waste."

There are loads of clever little packaging tweaks, too. For example, during development, engineers discovered the bottom row of each radiator wasn't operating at maximum efficiency. So they peeled back the sidepods, allowing both cooling cores to tilt another four degrees for more airflow. This allowed smaller charge coolers for the turbos. Which, in turn, cut 13.2 pounds. If you're versed in McLaren lore, that'll make you smile.

So will entering the 675LT. You step over a massive carbon sill, duck under the dihedral doors, and sink into the cockpit like good fiction. Acres of Alcantara, a small three-post wheel, and fixed-back buckets pinched from the P1. Seating position is bang on, slung low and hugely cab-forward. The V-8 lights off with a healthy cough. The seven-speed drops into gear with a weighty *click-clack* from the oversized paddles. Pit lane, Stowe corner, straightaway. Hammer down.

To dispel a misnomer: There is no such thing as a "racing car for the road." That is marketing schlock, hooey cooked up by some ad agency half-wit eons ago. Yes, there are homologation specials. None of them come on slicks or require oil preheating or a special license to operate. There are, however, road cars that behave like competition vehicles, that demand a certain approach and function best when driven accordingly. The 675LT is one of them.

God, it's fast. Fast everywhere. Fast into braking zones, fast through an apex, fast on exit. Each lap is

McLaren 675LT

PRICE $349,500
POWERTRAIN 3.8-LITER TWIN-TURBO V-8, 666 HP, 516 LB-FT; RWD, 7-SPEED AUTOMATIC
WEIGHT 2900 LB
0–60 MPH 2.8 SEC
PRODUCTION RUN 500

a trial in better exploiting the 675LT's incredible sensitivity to inputs, and it does not suffer trail-braking fools lightly. But that little bit of nervousness in the 650S has been dialed out. The suspension is retuned, the springs stiffened, the track widened 0.8 inch. The steering is quicker, too, and new bespoke Pirellis have all but eliminated the base car's front-end wash.

You carry so much momentum that the acceleration, massive as it is, fades away. More than 50 percent of the LT's engine components are new or revised, including the turbos, manifolds, fuel system, heads, cams, and rods. Through a helmet, the only discernible sound is pounding, intergalactic intake hiss. On Hangar straight, I glance at the dash. The mechanical tach needle is quivering and flickering and recklessly ingesting numbered notches. The digital speedo is so deep into its 205-mph well, I actually blink. When the rearview mirror fills up with that deployable snowboard of an airbrake, I'm sold.

This is faster than a Ferrari 458 Speciale, no doubt about it. Way faster. Like, there were debates inside McLaren about the not-so-sizable lap deltas between the 675LT and P1. (Per a factory test driver: "We could've dialed it back. Maybe we should've. But in the end, we just said 'stuff it' and went all out.") Carpeting, air-conditioning, navigation, and a stereo—all absent in the Ferrari—are here. Which brings us to that old McLaren stumbling block: romance.

That's always been the knock on the 650S, and 12C before, hasn't it? McLarens are "too cold, too tactical." But this is a racing firm, in principle and culture, and racing cars eschew theatrics for results. The 675LT is important because it feels like Woking finally reconciled that disconnect, and on Bruce's terms. Tactical? Try ruthless.

This car is an exercise in McLaren posterity, a great thing scrutinized and hatcheted and tested and molded into something even better. I'd sell my soul for a 458 Speciale. I'd mortgage everything for another thousand laps in the 675LT. —MAX PRINCE

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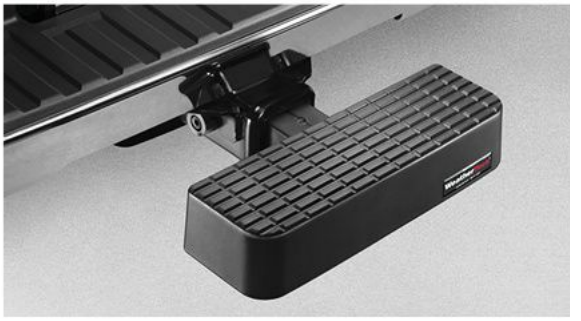

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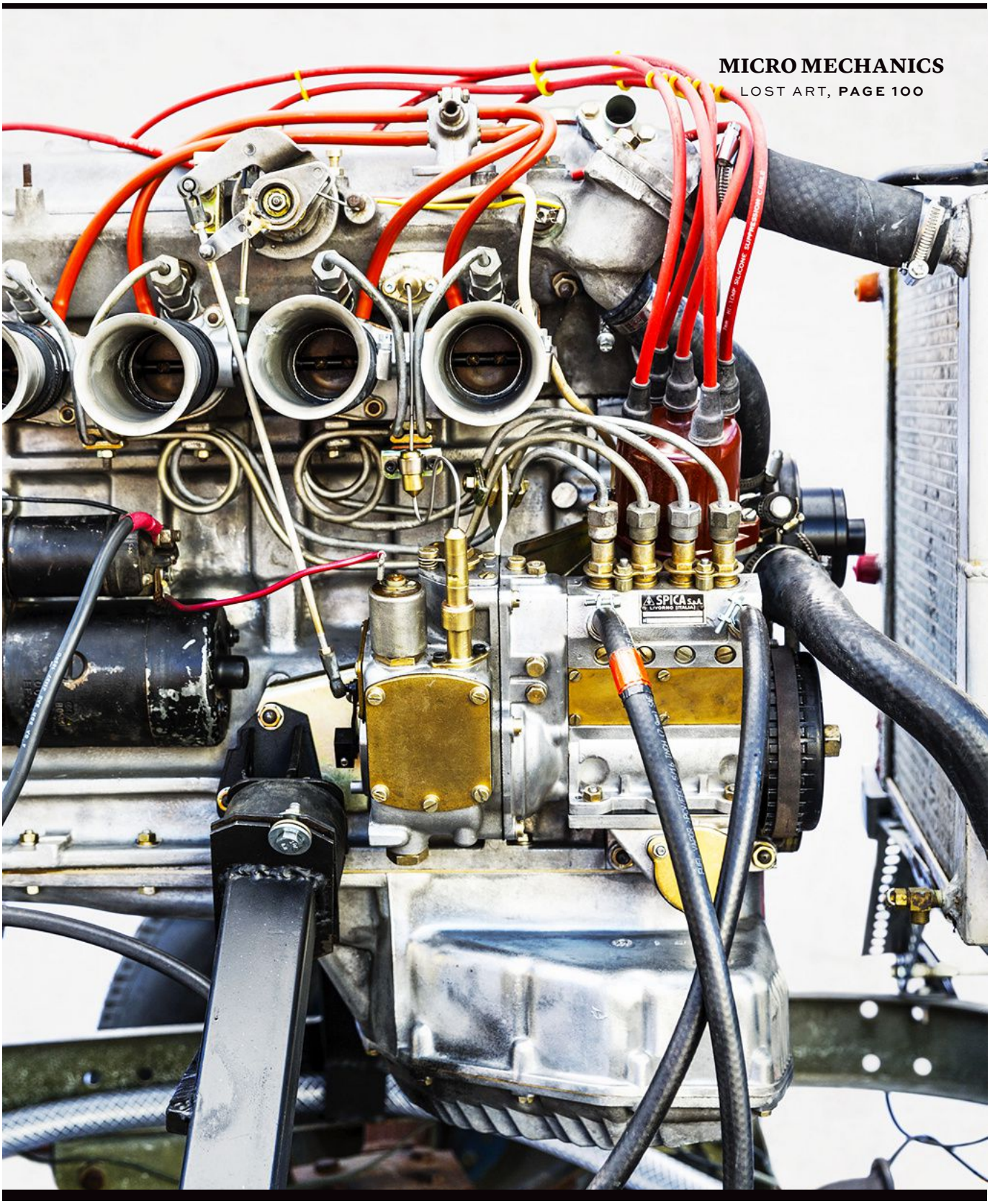
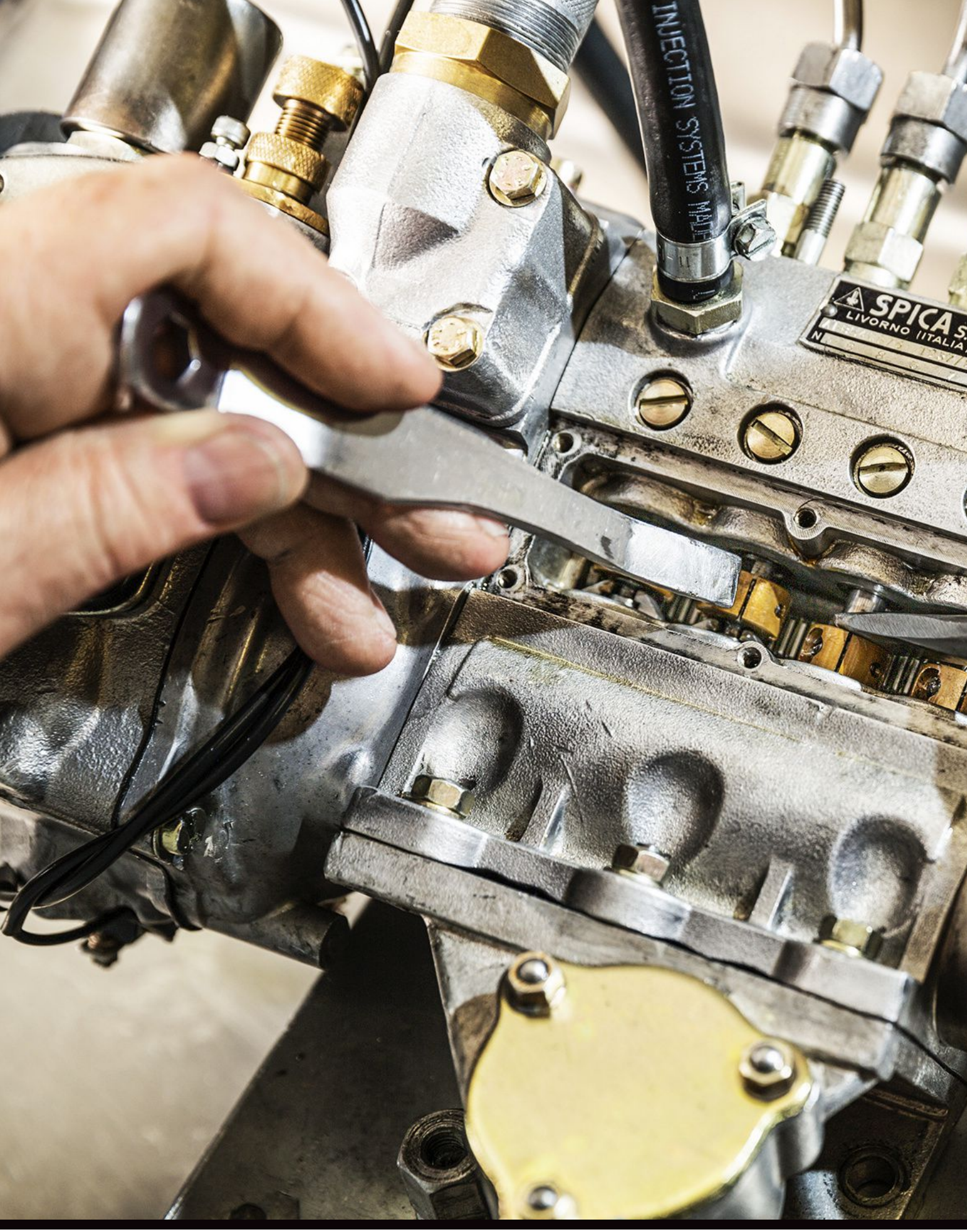


MICRO MECHANICS

LOST ART, **PAGE 100**



PHOTOGRAPHY BY **ROD McLEAN**

LOST ART BY SAM SMITH

MECHANICAL FUEL INJECTION

LIKE CLOCKWORK—JUST WEIRDER AND FULL OF FLAMMABLE LIQUID.

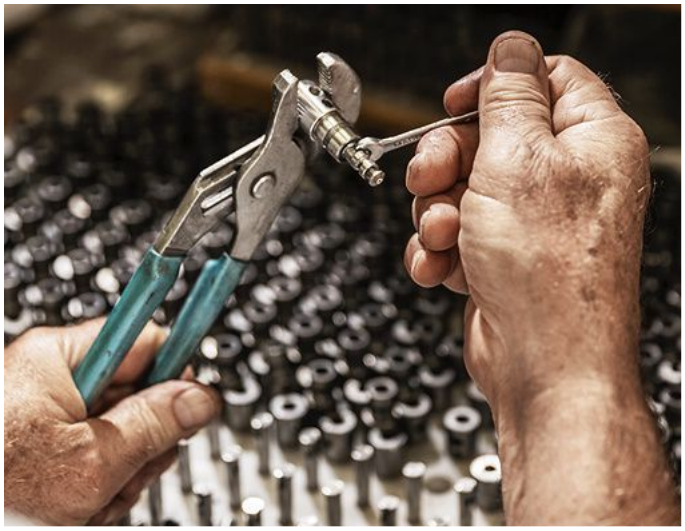
Picture an old windup desk clock. Now cross it with a gasoline engine, adding a tiny crankshaft and pistons. Tack on a few Buck Rogers bits, so it looks like Rube Goldberg's toaster. Flow gasoline through it at hundreds of psi. Finally, tweak the whole mess—maybe an oil feed, some balanced parts—to keep it from grenading in use.

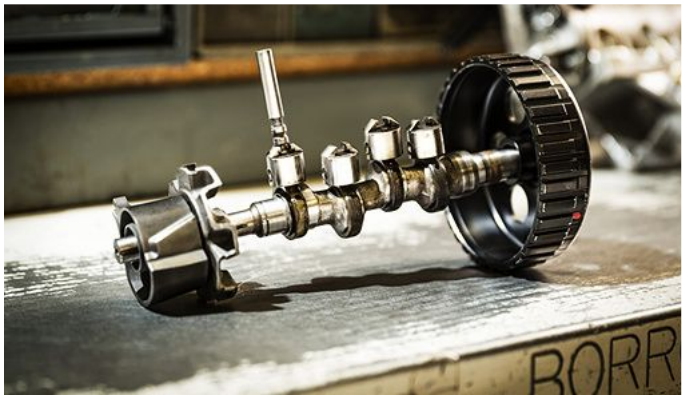
Congratulations! You've built a mechanical fuel-injection pump, from the days before digital engines. Think of it as a clockwork if-then statement: The "if" is engine condition, physically communicated to the pump by a handful of analog sensors and levers. The "then" is fuel delivery.

Generally speaking, this is how modern engine management functions, in everything from Fords to Ferraris. The difference is in the process. Modern cars use electronic sensors and computer-controlled injectors. Mechanical FI is brain and muscles in one box, a single organ handling both logic and distribution. And until the late 1960s, if you wanted a car without a carburetor, it was your only choice.

Wes Ingram and his business partner, Herb Sanborn, collaborate on rebuilding and modifying mechanical injection pumps for vintage Alfa Romeos. Ingram has been doing it since the Eighties, when, he says, "the cars were still driven every day." Sanborn, a retired oceanographer, joined him in 2000. We visited them in their Washington shop, Ingram Enterprises, because it's one of the only centers for such work. Also because SPICA injection—found on every U.S.-market Alfa from 1969 to 1981—is widely maligned. And thus a good way to illustrate the tech's darkness and light.

Like a lot of carmakers, Alfa Romeo arrived at fuel injection reluctantly, as a way to maintain performance while minimizing emissions. According to legend, carbureted Alfas failed the EPA's sniff test for 1968, so the marque went away for a year. When it came back, it brought a line of cars with a version of its racing injection, found on prototypes like the T33. Power outputs didn't change, and most Alfas in the rest of the world retained carbs. Some marque experts claim the pump's engineering cost was the same order of magnitude as the engine in the firm's legendary GTV coupe. ▸





Clockwise, from upper left: Hand-matching barrels. Sanborn's flow bench. The pump's crankshaft, cam, rods, and one plunger.

Diesel fuel behaves differently from gasoline, but like most Euro injection pumps, SPICA resembles a diesel unit. The pump is belt-driven from the crankshaft at half engine speed. It supplies timed, high-pressure fuel to one injector at each intake port. Each of those is essentially a spring-loaded valve that opens only when hit with fluid at a certain psi.

Early racing injection systems were almost binary, aimed at maximum power with little consideration for drivability. As such, SPICA's intelligence lies not in the fact that it pumps fuel, but how. The pump itself is a hydraulic device: one plunger per cylinder, pressurizing gasoline and actuated by a tiny connecting rod. Which makes its output linear with rpm. But because a gas engine's fuel appetite isn't linear—and here you can blame everything from the laws of physics to tuning choices—the pump has to compensate.

Properly explaining the way in which that happens would take a book. But broadly, a complex 3-D cam lives in the pump's rear section. It moves fore and aft with rpm, driven by centrifugal force, and is rotated axially by a linkage connected to the gas pedal. A follower on that cam moves a toothed rack that rotates the pump's plungers, varying the volume they deliver. A handful of mechanical compensating devices alter the follower's geometry even further, based on factors like coolant temperature and barometric pressure.

The whole thing looks like Leonardo da Vinci tried to design an artificial heart, failed, and switched to gyroscopes instead. While loaded on grappa. With the access panels off, it's virtually impossible to look away.

Fascinating details abound. Take the plungers. They run in steel barrels with micron-level clearance. No seals separate them from the oil in the pump's sump. Their fit alone holds back the 400 psi of fuel they can produce. All this for a marque where production inconsistencies mean body panels don't always fit when swapped between cars.

Boggle on that for a moment.

Ingram and Sanborn rebuild more than 120 pumps a year. Save a few standardized parts, everything has to be scavenged or made. ("There weren't even parts available in the Eighties," Ingram says. "The factory didn't want anyone messing with it.") Worn plungers are painstakingly hand-matched to their barrels from stockpiled spares. Since their clearances are essentially unmeasurable, the job has to be done by feel, with a roughly 50 percent reject rate. A flow bench ensures even output. Motorsport rebuilds see mixture altered by hand-tweaking the shape of the pump cam or its linkage—the results based either in experience, or live trial and error on a dynamometer.

"People used to replace these things with carbs because they didn't understand them," Ingram says. "Half the cars didn't run right when new, but the factory was afraid of the EPA, and they didn't want mechanics to know too much.

"I just hated seeing good parts go in the trash. But people are coming around. They're amazing little pieces. And you know what? It's crazy—we're backed up. More work than ever." ■

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NEW RULES OF CAR BUYING PART 1 OF 5

LET'S (STILL) MAKE A DEAL

WHY DO WE KEEP BUYING VEHICLES AT DEALERSHIPS?

According to market-research firm J.D. Power, more than a quarter of the 16 million new-car purchases in the U.S. last year were made by that tech-savvy group known as millennials at honest-to-goodness dealerships. How could that be, in an age of painless online shopping, when you can buy everything from shoes to mortgages via keystrokes? Why bother with a dealer anymore?

FAR FROM USELESS

Despite a few outliers, most notably Tesla Motors, dealers still control the new-car pipeline in this country. Their reign is unlikely to end soon. Long-established state franchise laws protect dealerships by largely prohibiting direct sales by automakers. A dealer who is independent of the automaker would, in theory, keep a broad inventory, negotiate on pricing, and provide competent repairs to encourage repeat business.

"There has been a focus on outdated laws that protect dealers, but there is that consumer issue, and it is a real one," says Aaron Jacoby, chair of the automotive industry practice group at Arent Fox law firm. "Laws are still geared toward protecting consumers. How will recalls be handled? How will warranty work be handled?"

Buying a car is a costly, complicated affair. The dealer facilitates that transaction by arranging financing, collecting taxes, handling state registration, and offering customers an opportunity to test-drive models before making a decision. Dealers will also take your old car on trade, provide factory-warranty service, and handle recalls.

CHASING TRANSPARENCY

Buying a new car remains a bricks-and-mortar transaction, but with the availability of online information, consumers demand transparency, simplicity, speed, and trust. Data-gathering websites detail how much dealers pay for cars, while other independent companies compile inventories of available vehicles, reveal what other buyers paid for the exact model under consideration, and connect shoppers to the dealer with the lowest price, often guaranteed in writing. Increasingly, buyers are striking virtual deals with salespeople they haven't met, filling out forms and initiating the transaction from their living rooms. A study released this year by Autotrader.com found that 56 percent of 4000 people surveyed wanted to start negotiating on their own terms, preferably online, and that nearly 75 percent wanted to complete the credit and financing paperwork that way, too. "Customer expectations are being shaped by retail experiences largely online," says Jeremy Anwyl, principal of Anwyl Partners and former vice chairman of Edmunds.com. "You talk to consumers about what bothers them. One is a lack of feeling comfortable with the price, and another is a feeling that their time is being wasted." So now, dealers try to complete the sale within an hour, instead of the industry average of four.

Customer expectations are being shaped by retail experiences online. Increasingly, buyers are initiating transactions at home.

Another bottleneck is the trade-in. John Krafcik, president of TrueCar, a pricing and information website that funnels buyers to dealers, speculates that people aren't buying new cars "because the thought of selling their current car is so horrible." TrueCar's solution is a smartphone app. Simply snap photos of your car, answer a few questions about its condition, and TrueCar solicits bids from dealers in your area, then sends you the highest offer. Assuming that an inspection verifies the claimed condition, the dealer will honor the bid.

GETTING SATISFACTION

To a public increasingly accustomed to online shopping, the dealer model may seem old-fashioned. But Jacoby says automakers and dealers "are slowly figuring out the dance toward how they themselves would dominate the Internet." He points to FordDirect.com. That site—and similar efforts such as GM's Shop-Click-Drive and Scion's Pure Process—allows customers to build a vehicle, receive a price quote, and find a nearby dealer for delivery.

According to J.D. Power's customer service indexes, people are more satisfied with dealers today than they have been, says John Humphrey, senior VP for global automotive operations. "It's evident in trend numbers from our surveys. They're more satisfied when they buy and when they go for service."

But "manufacturers and dealers need to clarify their roles and responsibilities and work together," Anwyl says. So while there is still no simple way to buy a car, technology has leveled the playing field, giving customers more clout.

—JAMES COBB AND NORMAN MAYERSOHN

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—LARRY WEBSTER

JOSH SCOTT

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10774330

WOW SUPER COUPON

RAPID PUMP® 1.5 TON ALUMINUM RACING JACK

SAVE $60

PITTSBURGH AUTOMOTIVE

LOT 69252/68053 shown
60569/62160/62496/62516

- 3-1/2 Pumps Lifts Most Vehicles
- Weighs 27 lbs.

$59.99 ~~$89.99~~

REG. PRICE ~~$119.99~~

10743208

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SUPER COUPON

HARDY™ MECHANIC'S GLOVES

MEDIUM	LARGE	X-LARGE
LOT 62434 62426	LOT 62433 62428	LOT 62432 62429 shown

YOUR CHOICE!

SAVE 60%

$3.99

NEW

REG. PRICE $9.99

10698747

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SUPER COUPON

2.5 HP, 21 GALLON 125 PSI VERTICAL AIR COMPRESSOR

CENTRALPNEUMATIC

LOT 67847 shown
61454/61693/62803

SAVE $70

$149.99 REG. PRICE $219.99

10720954

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SUPER COUPON

"Impressive Accuracy, Amazing Value" – Car Craft Magazine

TORQUE WRENCHES

PITTSBURGH PRO

- Accuracy within ±4%

1/4" DRIVE
LOT 2696/61277

3/8" DRIVE
LOT 807/61276

1/2" DRIVE
LOT 62431
239 shown

YOUR CHOICE!

$11.99

SAVE 60%

REG. PRICE $29.99

10734830

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WOW SUPER COUPON

1 TON CAPACITY FOLDABLE SHOP CRANE

PITTSBURGH AUTOMOTIVE

SAVE $150

- Includes Ram, Hook and Chain

LOT 61858/93840
69445/69512 shown

$99.99

~~$179.99~~

REG. PRICE $249.99

10777823

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SUPER COUPON

NEW

VEHICLE POSITIONING WHEEL DOLLY

PITTSBURGH AUTOMOTIVE

- 1250 lb. Capacity

LOT 67287/62234
61917 shown

SAVE $55

$64.99

REG. PRICE $119.99

10722708

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WOW SUPER COUPON

1500 WATT DUAL TEMPERATURE HEAT GUN (572°/1112°)

drillmaster

SAVE 70%

LOT 62340/62546
96289 shown

$8.99 ~~$14.99~~

REG. PRICE ~~$29.99~~

10734436

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SUPER COUPON

NEW

900 PEAK/ 700 RUNNING WATTS 2 HP (63 CC) 2 CYCLE GAS RECREATIONAL GENERATOR

LOT 60338/62472/69381 shown

SAVE $80

$99.99

REG. PRICE $179.99

STORM CAT

10700975

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WOW SUPER COUPON

US★GENERAL PRO 26" 16 DRAWER ROLLER CABINET

SAVE $330

- 1060 lb. Capacity
- 14,600 cu. in. of storage

LOT 61609/67831 shown

$319.99 ~~$369.99~~

REG. PRICE ~~$649.99~~

10721000

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SUPER COUPON

45 WATT SOLAR PANEL KIT

SAVE $160

LOT 62443
68751 shown

$139.99

REG. PRICE $299.99

THUNDERBOLT MAGNUM solar

10734938

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SUPER COUPON

12 VOLT, 10/2/50 AMP BATTERY CHARGER/ ENGINE STARTER

CEN-TECH

LOT 66783/60581/62334
60653 shown

SAVE 62%

$29.99

REG. PRICE $79.99

10744779

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SUPER COUPON

PITTSBURGH AUTOMOTIVE

3 TON HEAVY DUTY STEEL JACK STANDS

SAVE 55%

LOT 38846 shown
69597/61196
62392

$19.99

REG. PRICE $44.99

10746324

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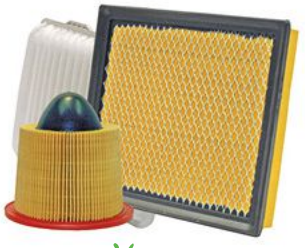

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xNo

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**NEED HELP? HELL YEAH, YOU DO.
WHY NOT ASK THE WORLD'S MOST OUTSPOKEN CAR GUY?**

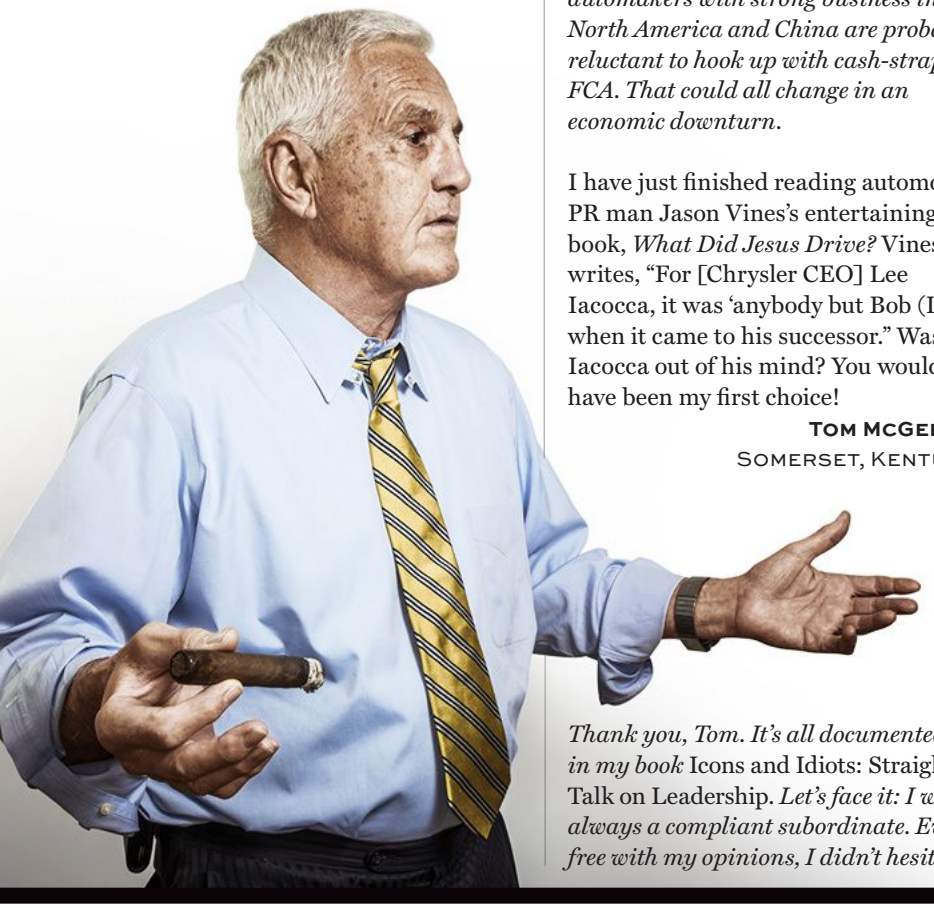
BY BOB LUTZ

Dear Bob,

Sergio Marchionne, "Detroit's chief instigator," has announced that his company, Fiat Chrysler Automobiles (FCA), is eager to find a merger partner. He says the auto industry is in dire need of consolidation. Is there any validity to this? Or is it just showboating?

JOHN MCGUIRE, JOHNSON CITY, NEW YORK

Only Sergio knows for sure. I suspect the answer might be both. Although FCA is doing well in the U.S. and, with Jeep, globally, the rest of the world looks grim. Fiat's strength has historically been in southern Europe, which, like the rest of the continent, is in the grip of a tenacious recession. Brazil, another longtime Fiat stronghold, is in really rough shape. Faced with these profit-sapping problems and an ever-larger need for capital to fund hybrid, electric, and autonomous cars, it's easy to see why FCA would want a partner. Other automakers with strong business in North America and China are probably reluctant to hook up with cash-strapped FCA. That could all change in an economic downturn.



I have just finished reading automotive PR man Jason Vines's entertaining book, *What Did Jesus Drive?* Vines writes, "For [Chrysler CEO] Lee Iacocca, it was 'anybody but Bob (Lutz)' when it came to his successor." Was Iacocca out of his mind? You would have been my first choice!

TOM MCGEEHAN
SOMERSET, KENTUCKY

Thank you, Tom. It's all documented in my book Icons and Idiots: Straight Talk on Leadership. *Let's face it: I wasn't always a compliant subordinate. Ever free with my opinions, I didn't hesitate to contradict Iacocca in meetings. Selection of his successor was payback. But, after the fairly disastrous DaimlerChrysler "merger" (actually, a takeover by Daimler), Lee said publicly that not choosing me was the worst mistake of his career. A moral victory!*

I am getting ready for my sophomore year in college and am thinking about careers. I'm passionate about cars and very good with economics and business. I want to enter the auto industry but don't know the best way to get my foot in the door. I don't have any connections, so it makes it a little more difficult. Any advice?

ALEX SADOWSKI
WEST HARTFORD, CONNECTICUT

Alex, I didn't have any connections, either. My advice is to suck up all the automotive knowledge you can, remain passionate about the product, get good grades (over 3.0 GPA helps), and take courses in behavioral science to learn about how people think, behave, and react to automotive design and brands. When you have all that, write me again. I'll hook you up with interviews.

Why don't auto manufacturers make vehicle interiors in senior-friendly editions? Say, a choice of large knobs and buttons with easy-to-read displays instead of touchscreens, haptic feedback, and mood lighting?

DON ZAWADIWSKY
MILWAUKEE, WISCONSIN

Well, Don, I now am certifiably "an old guy," and I see what you mean. The problem is twofold: Young designers and tech folks think scrolling through touchscreens is cool. But, since they're expensive, they go on cars bought by older drivers . . . exactly the wrong audience. Cadillac's CUE system should probably be on the Chevrolet Spark and Sonic, in keeping with younger buyers. I maintain that you just can't improve on radios with volume and tuning dials or climate control with three knobs: one for temperature, one for blower, and one to select where the air comes out.

Bob Lutz has been The Man at several car companies, so your problems are cake. Bring 'em on.

JOSH SCOTT

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